QUARTERLY REVIEW of PEDIATRICS

Vol. 4 No. 1 February 1949

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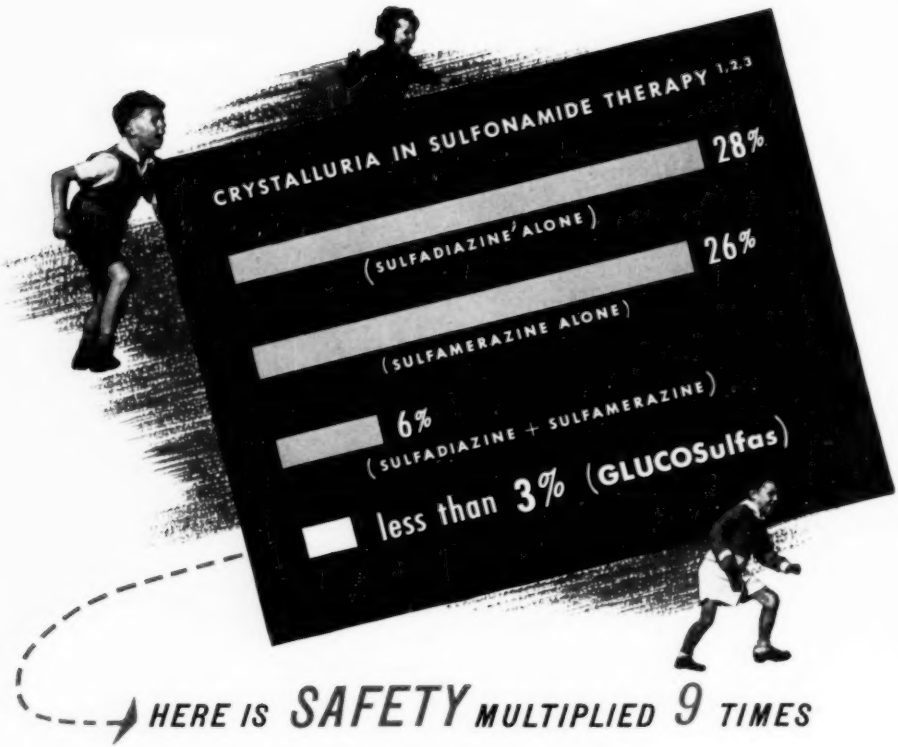

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BALANCED, BUFFERED LIQUID TRIPLE MIXTURE

Each 5 cc. (one teaspoonful) contains 0.5 Gm. of total sulfonamides, of which 37% is Sulfadiazine, 37% is Sulfathiazole and 26% is Sulfamerazine, 1.0 Gm. of sodium lactate and glucose. Supplied in pint bottles.

1. Flippin, H. F., and Reinhold, J. G.: Ann. Int. Med. 25:433, 1946.
2. Ledbetter, J. H., and Cronheim, G. E.: Am. J. Med. Sci. 216:27, 1948.
3. Frisk, A. R., et al: Brit. Med. J. 1:7, 1947.

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SHOULD VITAMIN D BE GIVEN ONLY TO INFANTS?

VITAMIN D has been so successful in preventing rickets during infancy that there has been little emphasis on continuing its use after the second year.

But now a careful histologic study has been made which reveals a startlingly high incidence of rickets in children 2 to 14 years old. Follis, Jackson, Eliot, and Park* report that postmortem examination of 230 children of this age group showed the total prevalence of rickets to be 46.5%.

Rachitic changes were present as late as the fourteenth year, and the incidence was higher among children dying from acute disease than in those dying of chronic disease.

The authors conclude, "We doubt if slight degrees of rickets, such as we found in many of our children, interfere with health and development, but our studies as a whole afford reason to prolong administration of vitamin D to the age limit of our study, the fourteenth year, and especially indicate the necessity to suspect and to take the necessary measures to guard against rickets in sick children."

*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, Am. J. Dis. Child. 66:1-11, July 1943.

MEAD'S Oleum Percomorphum With Other Fish-Liver Oils and Viosterol is a potent source of vitamins A and D, which is well taken by older children because it can be given in small dosage or capsule form. This ease of administration favors continued year-round use, including periods of illness.

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new!.. Eskadiamer

a *combination* fluid sulfonamide containing equal parts of sulfamerazine and sulfadiazine—the two safest sulfonamides in general use. Each 5 cc. (one teaspoonful) contains 0.25 Gm. (3.86 gr.) sulfamerazine and 0.25 Gm. (3.86 gr.) sulfadiazine.

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the widely-prescribed fluid sulfadiazine which provides desired serum levels much more rapidly than sulfadiazine in tablet form. Each 5 cc. (one teaspoonful) contains 0.5 Gm. (7.7 gr.) sulfadiazine.

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'Eskadiamer' & 'Eskadiazine' T.M. Reg. U.S. Pat. Off.

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When, despite its dietary importance, milk proves objectionable to patients (particularly during infancy, childhood, old age, pregnancy, and in gastro-intestinal and postoperative conditions), a frequently emphatic aversion may be readily changed to enthusiastic acceptance—by simply transforming *uncooked* milk into rennet-custards. Through the medium of "Junket" Rennet Powder or "Junket" Rennet Tablets, the resulting delicious rennet desserts not only are attractive to the eye and palate; they also are more easily digested by virtue of softer, more flocculent curd formation in the stomach. A truly royal reception for milk in the patient dietary may thus be assured—regardless of personal idiosyncrasies!

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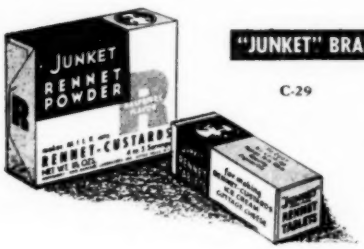

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contains dextrins, maltose and dextrose produced by hydrolysis of pure starch. It is free of microorganisms; no flavoring, cane sugar or preservative is added.

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Due to the small dose required, Drisdol in Propylene Glycol is *economical*, besides being *simple* and *convenient* to use. The average dose is only 2 drops in the daily ration of milk for infants, and from 4 to 6 drops per day in milk for children or adults.

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Drisdol in Propylene Glycol—10,000 units per Gram—in bottles of 5 cc., 10 cc., and 50 cc., with a dropper delivering 250 U.S.P. vitamin D units per drop.

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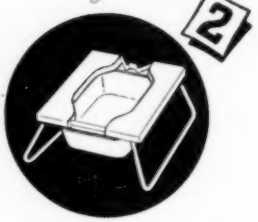
Comfort and easy accessibility are major reasons for Little Toidey being a help in developing proper toilet habits.

The complete unit (1) is necessary . . . Toidey Base (2) to provide when the bathroom is occupied or baby is confined to his room or visiting anywhere.



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4

. . . and now the **Toidey SPECIMEN COLLECTOR**

Every plastic Toideyette now made is with lugs to which a small plastic receptacle hooks to provide for easy taking of a clear specimen for urinalysis without baby's knowing it.

Toideyette is the shield and deflector that fits and locks into the front of Little Toidey.

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Order direct on your letterhead the complete Toidey Habit Training Unit or individual items for your office or home at at 20% discount. Transportation prepaid in U.S.A.

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QUARTERLY REVIEW of PEDIATRICS

Vol. 4 No. 1 February 1949

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Published in February, May, August and November.

Annual subscription rate: $11.00; 3 yrs. $28.00

Entered as second-class matter March 27, 1946, at the Post Office at Washington, D. C., under the Act of March 3, 1879.

ADVERTISING DEPARTMENT
2000 Connecticut Avenue, Suite 710, Washington 8, D. C.

Foreword

The prime function of the QUARTERLY REVIEW OF PEDIATRICS is to present, in readable form, summaries of all the important new contributions in every branch of pediatrics. The abstracts are prepared by pediatricians familiar with the subjects under consideration. The Editorial Board checks over all abstracts and adds interpretive or critical comments whenever necessary. The "Bookshelf" department reports informatively on new books the pediatrician should know about. Thus, within the covers of a single journal, there is brought together a concise chronicle of pediatric progress, well organized, reliable and complete. By exploring the entire expanse of medical literature the QUARTERLY REVIEW OF PEDIATRICS keeps its readers abreast of the most recent progress in all of pediatrics. A subscription to THE QUARTERLY REVIEW OF PEDIATRICS represents a continuous seminar on advances in pediatrics.

For convenience of reference the abstracts are grouped as follows:

1. Allergy
2. Anomalies, Genetics
3. Blood, Hemopoietic System
4. Cardiovascular System
5. Chemotherapy, Drugs, Poisons, Physical Agents
6. Clinical Pathology
7. Endocrine System
8. Eye, Ear, Nose and Throat
9. Gastrointestinal System
10. Genitourinary System
11. Growth, Puberty, Adolescence
12. History, Biography, Antiquities
13. Infectious Diseases, Acute
14. Infectious Diseases, Chronic
15. Liver, Kidneys, Spleen
16. Metabolic and Systemic Disorders
17. Milk; Infant and Child Feeding
18. Miscellaneous
19. Musculoskeletal System
20. Nervous System
21. Newborn Period, Prematurity
22. Nutrition
23. Parasitic Diseases
24. Pathology, Anatomy, Bacteriology
25. Physiology, Biochemistry
26. Psychology, Psychiatry
27. Public Health, Epidemiology
28. Respiratory System
29. Skin, Teeth, Hair
30. Social, Economic, and Organizational Problems
31. Surgery, Anesthesia
32. Tumors

The Pediatric Bookshelf

New Books, Pamphlets

Announcements

Issues of the QUARTERLY REVIEW OF PEDIATRICS appear in February, May, August, and November. A cumulative index for each volume is included in the November number. Suggestions, correspondence and editorial communications should be addressed to Irving J. Wolman, M.D., *Editor*, The Children's Hospital, 1740 Bainbridge Street, Philadelphia 46, Pa. Subscriptions should be mailed to the Washington Institute of Medicine, 1720 M St., N.W., Washington 6, D. C. Annual Subscription: $11.00. Three years: $28.00.

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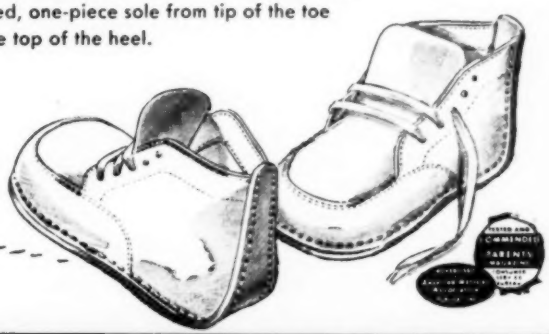

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for Mother & Baby
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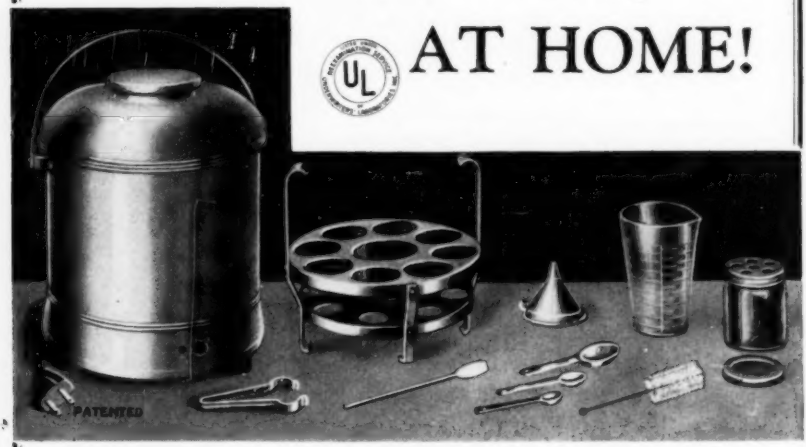

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FORMULA & STERILIZER
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• Miniature hospital outfit for home use. Includes all accessories for preparing baby's formula at home. Sterilizes bottles, nipples, caps, and formula utensils at one time. Sterilizes formula. Scientifically designed to safeguard babies against feeding infection and malnutrition.

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Literature on Request

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100% meats—Strained or Diced

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Special note: *In cases where infants are sensitive to milk proteins, Swift's Strained Meats may be tolerated very well. In such cases, many physicians are recommending these meats be given in large quantities to replace milk proteins in the infant diet.*

All nutritional statements made in this advertisement are accepted by the Council on Foods and Nutrition of the American Medical Association.

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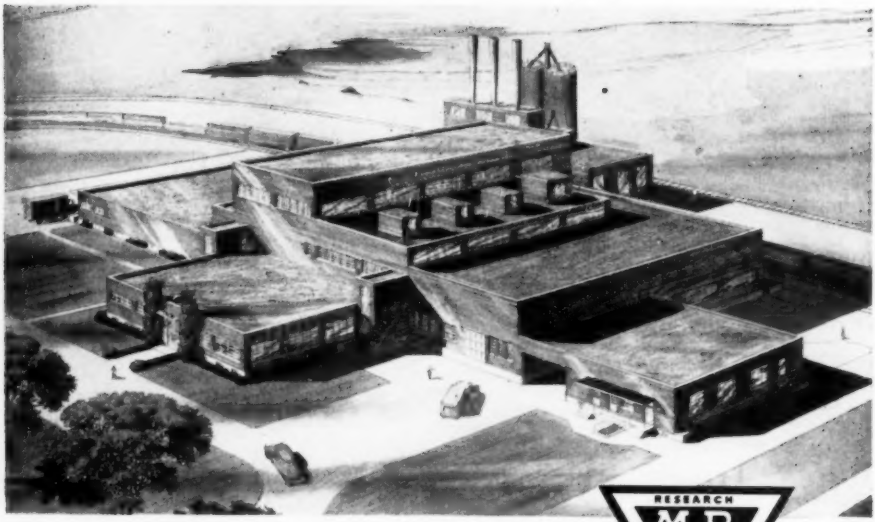
...first to develop and clinically test 100% Meats for Babies



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In acute respiratory infections control of the distressing discomfort

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In Colds

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For Coughs

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Sedacof and Codeine, a palatable syrup, is indicated in the cough of the common cold, in laryngotracheobronchial irritation, influenza, and the hacking cough of the aged. Average adult dose 1 to 2 teaspoonfuls 2 to 4 times daily. Children according to age.

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But oh, how *differently* parents can think!
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Dad sees him in football clothes, kicking the ball . . .

You Doctors Can Be Sure Your Young Patients Get Vitamins And Minerals In Heinz Baby Foods Because:

First, the fruits and vegetables used by Heinz must pass the closest inspection. Picked at flavor peak, they are rushed to Heinz kitchens located near the fields, to be processed immediately! *Second*, the cooking and packing methods are the result of scientific research. *Third*, to assure uniformly high vitamin and mineral retention, Heinz Baby Foods are checked by Heinz Quality Control Department.

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Ideal for soft-diet patients and convalescents, Heinz Baby Foods have fine flavor and texture — high nutritive value!

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57 VARIETIES
MADE BY
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AN OBJECTIVE IN MODERN-DAY PEDIATRIC FEEDING

Early Conditioning

TO A WIDE VARIETY OF FOODS

THE infant's sense of taste, at birth, is quite underdeveloped . . . He distinguishes between sweet and sour, bitter and bland, as indicated by grimaces and refusal to take food which is bitter or sour . . . But individualized taste develops rapidly with growth and experience. . . . There are far-reaching advantages in providing a widely varied diet at a very early age: The diversity will accustom the infant to a wide range of taste; he will learn to *enjoy* the variety of foods essential to optimal growth and development; aversion to strange foods, so often developed when first introduced at a later date, is thus largely avoided.

Libby's Baby Foods provide the variety needed for such planned feeding. . . . They are strained AND homogenized, and so fine in texture that they flow readily through a nipple opening of ordinary size, when mixed with the milk formula. Hence, they lend themselves to feeding early in life, even as early as the fifth week—before food hostilities develop.

Taste is important in conditioning the child to lasting food likes. Libby's Baby Foods are palatable. Taste-test Libby's Spinach, for instance, and learn for yourself how good it is.

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White's Cod Liver Oil Concentrate Liquid provides potent, antirachitic, natural vitamins A and D. Each two drops is equivalent, in vitamin content, to one teaspoonful of cod liver oil,* containing 312 units of vitamin D wholly derived from cod liver oil, and 3,120 units of vitamin A, supplied by cod liver oil concentrate adjusted and standardized with fish liver oils.

ECONOMICAL Cost-to-patient—about a penny a day for antirachitic protection of average infant. In convenient, palatable Liquid form—dropper administration.

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One of White's Integrated Pediatric Vitamin Formulas

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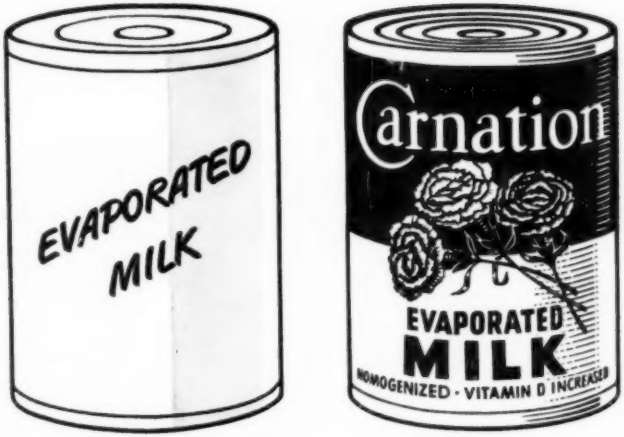
Second and third degree burns involving 25% of body surface.

White's Vitamin A&D Ointment induces rapid, healthy epithelialization and gratifying relief from discomfort in such conditions as: burns, slow healing wounds, indolent ulcers, avulsive injuries, various post-operative wounds, fissured nipples, and a variety of dermatologic conditions. White Laboratories, Inc., Pharmaceutical Manufacturers, Newark 7, N. J.

White's *Vitamin* **A D Ointment** *for faster healing*

Supplied in 1.5 oz. tubes, 8 oz. and 16 oz. jars and 5 lb. containers.



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NATURALLY, you'd choose a name you know . . . a name worthy of your confidence.

AND CARNATION *protects* your recommendation with the most scrupulous standards of safety, uniformity and nutritional value.

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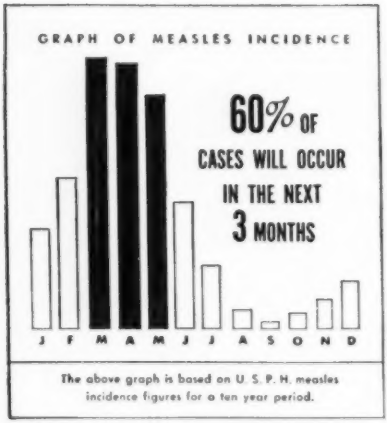
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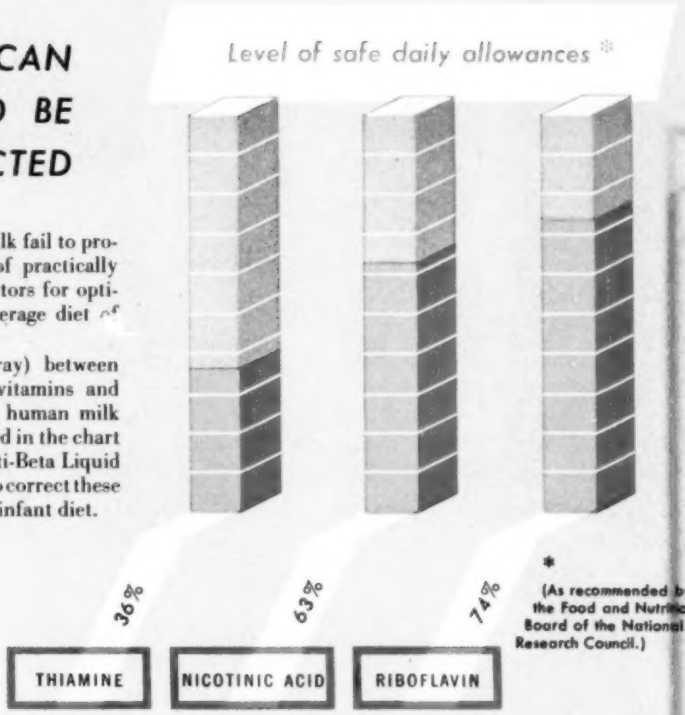

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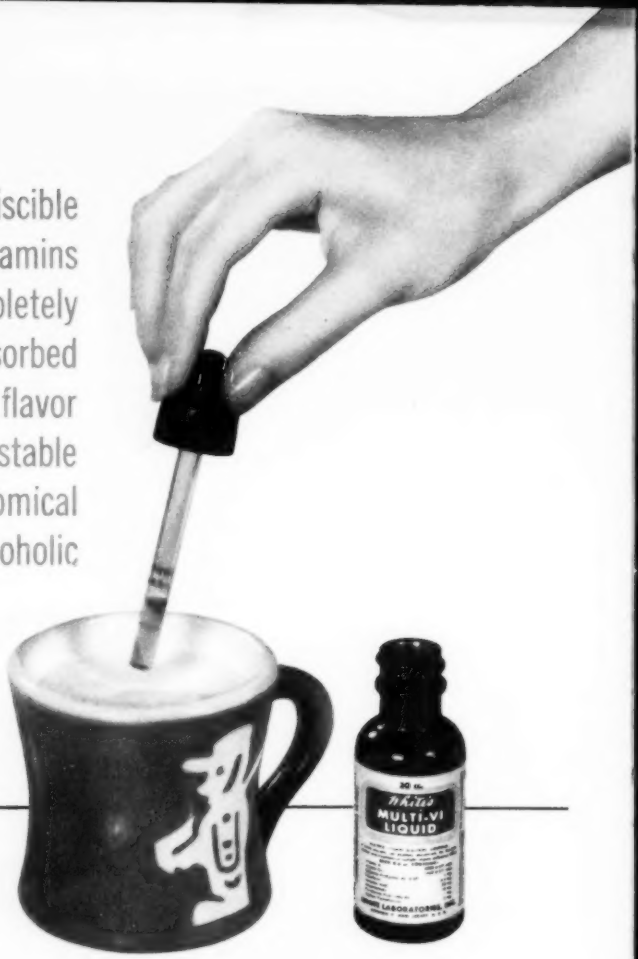

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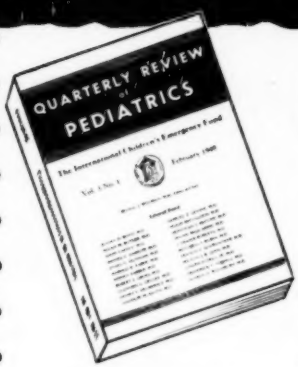

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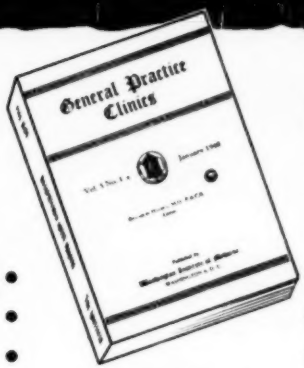

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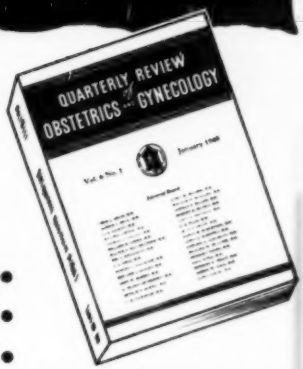

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Vol. 4 No. 1 February 1949

1. *Allergy*

Allergy in Children as Related to Altitude. *Julia Baker, Mexico City, Mexico.* Ann. Allergy 6:33-38, Jan.-Feb. 1948.

The author has noted that allergic tendencies are unduly common and severe at the high altitude of Mexico City (7,325 feet) and appear frequently in children never noticeably afflicted with allergic tendencies at lower altitudes. Of 1,000 children seen in general pediatric practice, 509 have showed definite allergic symptoms in Mexico City. Sixty-two children who lived part of the time in Mexico City and part of the time at lower altitudes were free of these allergic symptoms at the lower altitudes or the symptoms were less severe there. 2 references. 2 charts.

Pediatric Approach to the Management of Allergic Eczema in Children. *Bret Ratner, New York University College of Medicine, New York, N. Y.* New York State J. Med. 48:296-99, Feb. 1, 1948.

Infantile or childhood eczema, as defined in this paper, is viewed as an allergic dermatitis whether it is initiated by intrinsic or extrinsic factors. In its broad aspects the problem of allergic eczema is difficult but the immediate treatment can be handled intelligently without elaborate testing. Best results are obtained when the case is viewed from the standpoint of diet, environment, psychosomatic and constitutional phases, in conjunction with local dermal therapy.

The author recommends first that the patient be put on an al-

lergenically denatured diet, i.e., one comprised of foods in which the albumin and globulin fractions have been coagulated by moist heat. This basic diet is recommended because it reduces the quantity of native albumins ingested and yet nutritional balance is maintained. When the skin has cleared foods may gradually be returned to the diet and reactions observed, unless offending foods are determined by skin testing. With respect to the environment, all dust-producing articles should be eliminated as far as possible. Those which cannot be cast off, like good mattresses, pieces of furniture and so on, should be covered with some impervious material. Egyptian cotton, a very closely woven fabric, is preferable to rubberized materials which have a tendency to cause sweating. Stuffed toys should be eliminated. Fuzzy woolen garments, rough materials in general and pure silk must be discarded. Garments should be made of soft cotton materials. In many instances pets will have to be given up. The aim of local medication must be to heal the damaged skin and relieve itching. A 2 to 4 per cent aqueous solution of gentian violet is recommended as a healing agent for secondarily infected wet, oozing skin. Calamine lotion, in single or double concentration, with phenol up to 3 per cent—or without it—may be used as an adjuvant, aiding in drying wet areas and relieving itching. The question of ointments useful for the healing of the irritated and dry crusted forms of eczema is discussed at length. While ointments are being used the body should be covered. In severe cases complete restraint may be necessary. Bathing is not contraindicated. Some prefer a soapless agent. The free use of hydrogen peroxide aids in the removal of dried crusts. Sedatives may be necessary in the early stages. Phenobarbital and acetylsalicylic acid in small doses are of great value. They may be used individually or in combination.

If there is evidence of retardation in bone development, as evidenced by wrist roentgenograms, the giving of thyroid medication in judicious quantity is indicated. Under no circumstances should a patient with eczema be vaccinated against smallpox. Eczema may be self limited and clear spontaneously without any residual sensitivity. Many allergic dermatitides are the forerunners of other manifestations of allergy. Persistent cases should, therefore, be studied completely from an allergic standpoint and specific antiallergic preventive measures instituted. The use of local antibiotic therapy is disapproved as a routine measure. The antihistamine drugs are palliative and do not correct the disturbed body functions behind allergic dermatitis.—*Author's abstract.*

(*Some caution must be used in applying phenol over the entire body, as toxic symptoms may result. It also is unwise to vaccinate the sibling of a child with active eczema because generalized vaccinia may be picked up by the eczematous child. Such an infection can be very serious.*—ED.)

2. Anomalies, Genetics

Congenital Anomalies After Rubella During Pregnancy. (*Aangeboren afwijkingen ne rubeola in de zwangerschap*). *G. A. Fehmers and C. Mesdag.* Nederl. tijdschr. v. geneesk. 91:2419, August 1947.

Four children are described whose mothers had suffered from rubella during early pregnancy. The following abnormalities were found: temporary clouding of the cornea, congenital heart defect, thrombocytopenic hemorrhages and congenital heart defect with thrombocytopenic hemorrhages.—*M. G. Stronk.*

Multiple Congenital Malformations. A Consideration of Etiologic Factors. *Josef Warkany, Carolyn B. Roth and James G. Wilson, Cincinnati, O. and Rochester, N. Y.* Pediatrics 1:462-71, April 1948.

The medical literature of the past five decades is replete with the statement that multiple congenital malformations are always and necessarily due to changes in the germ plasm and therefore hereditary. While the authors are fully aware of the fact that some syndromes of multiple congenital malformations are genetically determined they emphasize that similar syndromes may also be caused by a variety of environmental influences. In man German measles in the mother may be an etiologic factor in causing congenital cataract, heart disease and other anomalies. Experimental work is reported which demonstrates that, by maternal nutritional deficiency, congenital anomalies can be induced in the offspring. A syndrome of multiple congenital anomalies in soft tissue organs occurs in rats whose mothers are reared and bred on vitamin A deficient diets. Ocular anomalies, diaphragmatic hernia, renal anomalies, ectopy of ureteral opening, persistence of both sets of genital ducts, aortic arch anomalies, open interventricular septum, hypospadias, agenesis of one lung and tracheoesophageal fistula were observed in fetuses obtained from vitamin A deficient mothers. None of these anomalies was found in control animals fed an adequate diet. The authors point out that they did not simulate in their experiments human dietary conditions. The fact that a syndrome of multiple congenital anomalies can be produced experimentally by changes in the maternal environment should make us wary of attributing all types of multiple congenital anomalies to changes in the germ plasm. 18 references. 1 table. 7 figures.—*Author's abstract.*

3. Blood, Hemopoietic System

Hemoglobin Levels at Different Ages. *L. B. Pett and G. F. Ogilvie, Department of National Health and Welfare, Ottawa, Ont., Canada.* Canad. M. A. J. 58:353-55, 1948.

Hemoglobin levels were obtained during nutrition surveys of almost every province in Canada. The averages and ranges represent the largest collection of figures yet reported for unselected people all over Canada, in which no differences due to methods or instruments could enter (Table I.). The method employed was to pipet 0.02 ml. of

TABLE I.—*Percentage of Canadians Classified into Age and Sex Groups, Found at Each Level of Hemoglobin.*

Age group (years)	Sex	10.0 and less	10.1 to 11.0	11.1 to 12.0	12.1 to 13.0	13.1 to 14.0	14.1 to 15.0	15.1 to 16.0	16.1 and over	Average Hb.	Total for Sex	Total for Age
1 to 6	M	2	9	36	39	11	2	1	0	12.0	160	
	F	1	8	26	47	16	2	0	0	13.0	159	319
7 & 8	M	0	2	19	42	27	8	1	0	12.7	335	
	F	0	2	18	41	26	11	2	0	12.8	377	712
9 & 10	M	0	1	12	42	29	13	2	0	13.0	320	
	F	0	2	13	44	28	10	3	0.3	12.6	341	661
11 & 12	M	0	1	12	36	32	16	4	0	13.1	222	
	F	0.4	4.0	6	35	33	20	5	0	13.2	254	476
13 & 14	M	2	2	12	25	34	21	2	0	13.2	116	
	F	0	2	5	40	28	24	14	0	13.2	127	243
15 & 16	M	0	0	7	16	30	32	5	2	13.8	57	
	F	0	3	8	44	27	12	13	0	13.0	59	116

finger-tip blood into a 0.1 per cent sodium carbonate solution and read within a few minutes on a battery-operated Cenco Photelometer calibrated by oxygen capacity. The pipets were carefully standardized and calibrated. 5 references. 1 table. 1 figure.

The Genetic Relation and Clinical Differentiation of Cooley's Anemia and Cooley's Trait. *Geneva A. Daland and Maurice B. Strauss.* Blood 3:438-48, April 1948.

Since earlier publication four additional families have been studied which illustrate the clinical and genetic relationships of Cooley's anemia and Cooley's trait. The family histories are described. In one of these families 3 cases of typical Cooley's anemia were observed. One of these patients with Cooley's anemia has given birth to a living child, an event thus far unreported. This child exhibits Cooley's trait. The differentiation between Cooley's anemia and Cooley's trait is best showed by the following table.

Three main types of inheritance could explain the relationship between Cooley's anemia and Cooley's trait: (1) a single dominant factor variably expressed; (2) simultaneous presence of two nonallelomorphic dominant factors one inherited from each parent; (3) a

	Cooley's Anemia	Cooley's Trait
Red Blood Cell Count	<5,000,000	5,000,000—8,000,000
Mean Corpuscular Volume	50 to 100 cu. micra	55 to 80 cu. micra
Hemoglobin	<10 Gm. per 100 cc.	9 to 16 Gm. per 100 cc.
Nucleated Red Blood Cells	Common	Rare
Reticulocytes	Increased	<4 per cent
Polychromatophilic Cells	Increased	Occasional
Stippled Cells	Marked	Frequent
Icteric Index	Increased	Normal
Leukocytes	Increased	Normal
Poikilocytosis	Extreme	Moderate
Bone Changes	Generally in skull, other bones	Skull only (slight)
Splenomegaly	Common	Occasional
Features	Mongoloid	Normal
Age	Young	Any
Prognosis	Poor	Excellent

single "incomplete" recessive or dominant factor. Under this last type of inheritance the heterozygote would exhibit Cooley's trait and the homozygote, Cooley's anemia. The data presented, together with the extensive statistical analysis of Valentine and Neel are compatible with either the second or third mode of inheritance. It is recommended that the terms "Cooley's anemia" and "Cooley's trait" be used, replacing "familial microcytic anemia", "thalassemia major" and "minor", "familial polycythemia" and "target cell anemia". 22 references. 5 tables. 4 figures.—*Author's abstract.*

(*Cooley deplored the use of his name to describe the severe and generally fatal macrocytic hypochromic anemia which appears almost exclusively in Italian and Greek families. He felt that it added an undesirable eponym and preferred to refer to the condition as Mediterranean anemia. Measurement of red cell resistance to osmotic hemolysis is probably the most reliable single test for the detection of this anemia. The increase in resistance in the mild or carrier form is as marked or more marked than in the severe form. Splenomegaly is more than just common in the severe form; it is a sine qua non for complete diagnosis.*—ED.)

A-B-O and Rh Blood Antigens of Fetuses of About Forty-Five and Fifty-Five Days. *Bruce Chown and Marion Lewis, Children's Hospital, Winnipeg, Man., Canada.* Canad. M. A. J. 58:504, May 1948.

Data are presented from 2 fetuses, aged about 45 and 55 days, to indicate that various of the blood type antigens A_1, B, M, N, C, D and c may be demonstrated that early in gestation. 2 references.

The Occurrence of Water-Soluble Rh Substances in Body Secretions. *James F. Mohn and Ernest Witebsky, University of Buffalo, School of Medicine and Buffalo General Hospital, Buffalo, N. Y.* New York State J. Med. 48:287-90, Feb. 1, 1948.

The blood group specific characteristics A and B are known to occur in large concentrations in most of the body secretions. In con-

trast the occurrence of water-soluble Rh substances has been the subject of some controversy. The authors of this article have previously demonstrated Rh substances in the majority of amniotic fluids although only in low concentrations. They now present the results obtained from their examination of saliva, gastric juice and additional amniotic fluids. The inhibition of agglutination technic was the method used for the demonstration of water-soluble Rh substances in these body fluids. In the study reported no definite occurrence of Rh substances in saliva could be found in the 30 cases examined. On the other hand, twenty gastric juice specimens from Rh-positive adults when examined for Rh secretion were positive in 12 instances and negative in 8. Qualitative differences also were noted when cells of the different subtypes of the Rh factor were used for the tests, indicating differences of the subtypes in gastric juice. Typical examples of the content of Rh substances in concentrated amniotic fluids as against their unconcentrated counterparts are given. 5 references. 4 tables.

Autohemagglutinins and Hemolysins with Hemoglobinuria and Acute Hemolytic Anemia in an Illness Resembling Infectious Mononucleosis. *Laurence B. Ellis, Oscar J. Wollinman and Richard P. Stetson, Boston City Hospital and Harrard Medical School, Boston, Mass.* Blood 3:419-30, April 1948.

Acute acquired hemolytic anemia occurs rather infrequently but has been described as a complication of many different types of infections diseases as well as due to various drug poisonings. A patient is described with an illness suggesting infectious mononucleosis complicated by the presence of autohemagglutinins and hemolysins. 21 references. 5 tables. 1 figure.—*J. H. Githens, Jr.*

Parenteral Vitamin K Therapy During the Antepartum Period and Its Effects on the Infants' Prothrombin Levels. *C. Reich, R. L. McCready, H. Chaplin and R. Lipkin, Lenox Hill Hospital, New York, N. Y.* Am. J. Obst. & Gynec. 53:300-302, February 1947.

This is a study of the prothrombin time determinations in 500 newborn infants whose mothers had been given vitamin K during labor. The preparation given was the water-soluble menadione bisulfite or Hykinone, in a 20 mg. dose intramuscularly. If the labor was prolonged over twelve hours, this injection was repeated. If the labor was four hours or less the infant was given an additional injection of 2 mg. of Hykinone. Prothrombin tests were done on the infants daily for the first week, according to the method of Quick. The composite curve of the cases treated according to this schedule starts on the first day of life with a prothrombin time of about thirty-two seconds, and, with slight variations, maintains this level throughout the first seven days. With other control patients for whom no vitamin K was given to the mother or child, the prothrombin times in the infants started at about

forty-five seconds on the first day of life, rose to about sixty seconds between the second and fourth day and dropped to a normal of thirty-two seconds on the seventh day. As exceptions, 5 infants maintained a flat prothrombin curve, notwithstanding the fact that no vitamin K had been given either to mother or child. In 3 of the 500 to whom vitamin K was administered, the infants showed no response and the prothrombin levels became elevated on the third and fourth day. 8 references. 1 figure.

Components of the Prothrombin Complex. *Armand J. Quick, Marquette University School of Medicine, Milwaukee, Wis.* Am. J. Physiol. 151:63-70, November 1947.

The writer has studied two families in which several members have congenital hypoprothrombinemia. The fact that the defects in these families are basically different has made it possible to present a clearer concept of the factors participating in the formation of thrombin than has hitherto been possible. The prothrombin time in the affected members of the first family was consistently fifteen and one-half to sixteen seconds; in the second family nineteen to twenty seconds. The normal by the method used is eleven and one-half to twelve seconds. Present evidence indicates that in the formation of thrombin the following agents are required: prothrombin (components A and B), a labile factor, thromboplastin and calcium. There is no evidence that any of these agents are enzymes. The reaction appears to be strictly stoechiometric. Study of the hypoprothrombinemia of the first family showed the blood to be deficient in component B. A similar deficiency is caused by the administration of dicumarol. In the second family, the hypoprothrombinemia was due to the lack of component A. Preliminary studies suggest that it is this principle which decreases in vitamin K deficiency. 16 references. 4 tables.

Hemophilia. The Mechanism of Development and Action of an Anticoagulant Found in Two Cases. *John S. Lawrence and Charles G. Craddock, Jr., University of Rochester School of Medicine and Dentistry and Strong Memorial and Rochester Municipal Hospital, Rochester, N. Y.* Science 106:473-74, Nov. 14, 1947.

The presence of a circulating anticoagulant which could prolong the coagulation time of normal blood was demonstrated repeatedly in the blood of 2 patients with hemophilia during their hemorrhagic episodes. The anticoagulant was not antagonistic to any one of the components considered in the classic theory of coagulation. By electrophoretic fractionation of the plasma, it was found that only the gamma globulin fraction inhibited the coagulation of normal plasma. The anticoagulant is apparently a gamma globulin, and it was found to appear only after repeated transfusions of whole blood or injections of antihemophilic globulin. To test whether it may be the result of an immu-

nization of the patient with some substance in normal blood or fraction I of Cohn but lacking in the patient's blood, precipitin tests were done using the serums of the 2 patients against serial dilutions of fraction I, containing a known amount of protein and at pH 7.0. There were positive precipitins in the serums of both patients. The anticoagulant was showed then to inhibit directly antihemophilic globulin. A hypothesis is presented to explain the presence of the anticoagulant in the 2 patients. Each was deficient in, or lacked, antihemophilic globulin which is essential for normal coagulation. This globulin may liberate thromboplastin from platelets in the first stage of clotting. When this globulin is given to ordinary hemophiliacs, it accelerates coagulation. In these 2 patients, repeated injections of the substance are thought to have produced antibodies. These antibodies will inhibit any globulin given later, which explains why these patients became refractory to further transfusion or injection of fraction I. The active globulin factor was rendered ineffective by the circulating antibodies. These antibodies would exert an anticoagulant effect when the patients' blood was mixed with normal blood in vitro by inhibiting the globulin substance in normal blood. The explanation proposed for the development of a refractory state to transfusion in the 2 subjects, based upon an immunologic response to injections of a globulin fraction deficient or lacking in their blood, may also be the underlying factor in the refractory phase manifested by many hemophiliacs. 7 references, 1 table.

Studies on the Enigma of the Hemostatic Dysfunction of Hemophilia. *Armand J. Quick, Marquette University School of Medicine, Milwaukee, Wis.* Am. J. M. Sc. 214:272-80, September 1947.

Studies of hemophilic and normal blood were made by means of a new procedure in which the consumption of prothrombin was taken as an index of thromboplastin activity. Hemophilic plasma was found to react as readily with thromboplastin as does normal plasma. This disproves the previous suggestion that an antithromboplastic agent was present in hemophilic blood. The specific deficiency of hemophilic blood was supplied by the addition of either normal plasma or thromboplastin (rabbit brain extract). Since thromboplastin injected intravenously caused intravascular clotting, while plasma did not, it was evident that the agent in plasma was different from that in tissue extracts. The agent in plasma appeared to be in an inactive form. Moreover, the addition of plasma produced a sustained improvement in coagulation for a period of seventy-two hours. Apparently the necessary agent was released gradually. The conclusion drawn from these facts was that the specific deficiency in hemophilia was in the precursor of thromboplastin. This substance was named thromboplastinogen.

The platelets were showed to be an essential part of the clotting mechanism. Their removal markedly reduced the conversion of prothrombin. Platelets from both normal and hemophilic blood were show-

ed to contain essentially no thromboplastin. Platelets from a hemophiliac were found to be entirely normal qualitatively. This was demonstrated by the fact that when added to platelet-free normal plasma, they restored the coagulation to normal just as effectively as other platelets. From these findings it was apparent that the activity of hemophilic platelets was due to some action that they could exert on a substance present in normal plasma and not in hemophilic plasma (i.e., thromboplastinogen). Production of thrombin was showed to be related to platelet disintegration. Platelet disintegration apparently releases an enzyme which starts the clotting mechanism by activating thromboplastinogen. Hemophilic platelets are normal but have no thromboplastinogen to convert.

From these studies, the following essential steps were suggested for the process of normal blood coagulation: (1) Thromboplastinogen + platelet enzyme → thromboplastin; (2) Prothrombin + thromboplastin + calcium → thrombin; (3) Fibrinogen + thrombin → fibrin. The first and third steps were thought to be enzymatic reactions and the second step stoechiometric. 23 references. 6 tables.—*J. H. Gibbons, Jr.*

First Report of the Committee for Clarification of the Nomenclature of Cells and Diseases of the Blood and Blood-Forming Organs.* Am. J. Clin. Path. 18:443-50, May 1948.

A committee for clarification of the nomenclature of cells and diseases of the blood and blood-forming organs held its first meeting in Chicago on Oct. 25-26, 1947. The committee was sponsored by the American Society of Clinical Pathologists and the American Medical Association. The following recommendations were made for general adoption.

The term *leukocyte* should be viewed as synonymous with white blood corpuscle and include all white cells of the blood and their precursors in the blood-forming organs. This and other words derived from the same root should be spelled with a *k* and not a *c*, *e.g.*, leukocyte, leukemia, not leucocyte or leucemia. The descriptive terms for granules, *neutrophil, eosinophil, basophil, and azurophil* should be spelled as indicated without a final *e*. The name of the most undifferentiated of the cells of each series should carry the suffix *-blast*, the second stage the prefix *pro-*, and, except in the granulocytic series, all cells that are more mature than the -blast stage be named with the suffix *-cyte*. The name for the 4th stage in the granulocytic and erythrocytic series is to have the prefix *meta-*. The terms *blast cells* and *pro cells*

*This report has been approved for publication by the following Committee: Howard L. Alt, Lawrence Berman, O. A. Brines, C. G. Culbertson, T. J. Curphey, William Dameshek, Charles A. Doan, Hal Downey, Ernest H. Falconer, R. F. Farquharson, Morris Fishbein, Alvin G. Foord, Claude E. Forkner, Willis M. Fowler, A. S. Giordano, S. E. Gould, Russell L. Haden, Byron E. Hall, F. J. Heck, J. M. Hill, Roy R. Kracke, L. R. Limarzi, Stacy R. Mettler, J. J. Moore, Edwin E. Osgood, Isabella H. Perry, Richard J. Plunkett, Stanley P. Reimann, Nathan Rosenthal, S. O. Schwartz, Carl F. Vilter and L. J. Witts.

may be used when speaking of the stage of development as a whole or when the series to which the cells belong has not been identified.

Fine chromatin structure is defined as having the nuclear appearance of a background of homogeneous lighter-staining parachromation, overlaid by a darker staining lace-net meshwork or finely stippled pattern of basichromatin, with no aggregation of the basichromatin into even a single clump of appreciable size staining darker than any other areas in the nucleus. A *nucleolus* is defined as a hemogen-

Recommended Terms and Terms to be Avoided When Referring to Specific Cells of the Blood and Blood Forming Organs

NAME OF SERIES	TERM TO BE USED	TERMS TO BE AVOIDED
Lymphocytic	Lymphoblast	Myeloblast, hemocytoblast, lymphoidocyte, stem cell, lymphocyte
	Prolymphocyte	Large lymphocyte, pathologic large lymphocyte, atypical leukocytoid lymphocyte, monocyte, immature lymphocyte
	Lymphocyte	Small, medium or large lymphocyte, normal lymphocyte, small, medium or large mononuclear
Monocytic	Monoblast	Myeloblast, hemocytoblast, lymphoidocyte, lymphocyte, stem cell, immature monocyte
	Promonocyte	Premonocyte, hemohistioblast, immature monocyte, Ferrata cell
	Monocyte	Large mononuclear, transitional, clasmatocyte, endothelial leukocyte, histiocyte, resting wandering cell
Granulocytic	Myeloblast	Granuloblast, hemocytoblast, lymphoidocyte, lymphocyte, stem cell
	Progranulocyte	Promyelocyte II, leukoblast, myeloblast, premyelocyte, promyelocyte, progranulocyte A
	Myelocyte	Granulocyte, myelocyte B, non filament, class I
	Metamyelocyte	Metagranulocyte, juvenile, myelocyte C, non-filament, class I
	Band cell	Staff cell, stab cell, non-filament, class I, rod nuclear, polymorphonuclear, stabkernige, rhabdocyte, non-segmented.
	Segmented	Polymorphonuclear, filamented, class II, III, IV, or V, lobocyte
Plasmacytic	Plasmablast	Myeloblast, hemocytoblast, lymphoidocyte, lymphocyte, stem cell, lymphoblastic plasma cell, myeloma cell
	Proplasmacyte	Türk cell, Türk irritation form, lymphoblastic or myeloblastic plasma cell, myeloma cell
	Plasmacyte	Plasma cell, Unna's plasma cell, Marschalko's plasma cell, plasmacytoid lymphocyte, myeloma cell
Thrombocytic	Megakaryoblast	Megalokaryoblast
	Promegakaryocyte	Premegalokaryocyte
	Megakaryocyte	Megalokaryocyte
	Thrombocyte	Platelet, thromboplastid
	Disintegrated cell	Senile cell, smudge, basket cell, smear cell, degenerated cell

eous blue-staining area within the nucleus of a cell, which stains more like the cytoplasm than does any other part of the nucleus. The term *azurophil* should be applied to the granules seen typically in the cytoplasm of cells of the lymphocytic and monocytic series and the progranulocyte stage of the granulocytic series.

The terms best suited for referring to cells of a particular series or to a disease affecting any cell of that series are *lymphocytic, granulocytic, monocytic, plasmacytic, erythrocytic* and *thrombocytic* (see table). The term *toxic neutrophils*, followed by 1 to 4 plus designation, is recommended for the grading of toxic granules, basophilia of the cytoplasm, and vacuoles and condensation of nuclear chromatin in the neutrophils, since its meaning is clear. The grading should depend more on the degree of change than on the percentage of the cells involved and should be recorded in the report whenever the degree of change exceeds 2 plus. *Disintegrated cells* should be recorded as such in the differential report, even though they may be identifiable from their dispersed granules. They should be counted even if only shreds of nuclear material are discernible, since they are included in the total leukocyte count.

(*From now on the* QUARTERLY REVIEW OF PEDIATRICS *will conform with this recommended and much needed nomenclature. The proposed new nomenclature for the red cell series will be summarized as soon as feasible following its publication.*—ED.)

4. Cardiovascular System

Cardiac Murmurs in Infancy. *Nancy Cox, Institute of Social Medicine, Oxford, England.* Brit. M. J. 4542:148-50, Jan. 24, 1948.

Six hundred and thirty ostensibly healthy infants were examined at regular intervals. Thirty-two (5 per cent) were noted to have a murmur at some time in the first two years of life. All murmurs were systolic; 11 were present on one examination only, 3 appeared on more than one visit but eventually disappeared and 14 persisted throughout all examinations. Four patients were not reexamined. The murmurs varied in age of onset: 23 of the 32 were not detected until after 9 months of age. In only 1 case was cyanosis observed and in this patient the diagnosis of congenital heart disease was made. In 1 other child there was some suggestion of exertional dyspnea. A longer follow-up may provide further clinical data on the significance of these cardiac murmurs. In view of the fact that murmurs do disappear and that there may be no associated symptoms it is advisable not to alarm parents unduly when a systolic murmur is found in this age group. 7 references. 1 table.—*R. N. Paul.*

Measurements of the Cardiac Silhouette in the Newborn (*Silueta cardiaca y dametros cardiacos en el recien nacido*). *Augustin Castellanos and Otto Garcia, Municipal Hospital of Havana, Havana, Cuba.* Rev. cubana pediat. 20:133-49, March 1948.

The average roentgen measurements of the heart shadow in 16 normal infants without any thymus shadow, with ranges, were as follows: transverse diameter—5 cm. (4.2 to 5.9); long diameter—5 cm. (4.1 to 6.0); broad diameter—4 cm. (3.3 to 4.6); left ventricular cord—2.4 cm. (2.2 to 3.1); right ventricular cord—4.6 cm. (3.7 to 5.3). 14 references, 5 tables, 5 figures.—*A. M. Bongiovanni.*

Four Cases of Carditis Occurring in Children and Associated with the Administration of a Foreign Serum. *J. Storey, Royal Alexandra Hospital for Children, Sydney, Australia.* M. J. Australia 1:337-39, Mar. 13, 1948.

A few cases of carditis following serum sickness have been reported. The author presents 4 more cases which have in common the development of polyarthritis, fever, increased sedimentation rate and carditis following the injection of foreign serum. The patients were 4 to 11 years old and had received either tetanus antiserum (3 cases) or diphtheria antitoxin (1 case). Three developed serum sickness in the interval between the injection and the discovery of the carditis.

It is conceivable that all 4 patients may have had rheumatic infections in view of the fact that administration of tetanus antiserum is a fairly common procedure and that these cases were selected from over 1,000 histories of rheumatic fever investigated. 5 references.—*R. N. Peal.*

Myocardial Changes in Fatal Diphtheria. A Summary of Observations in 221 Cases. *Ira Gore, Washington, D. C.* Am. J. M. Sc. 215:257-66, March 1948.

Despite the continuous downward trend in the incidence of diphtheria in the United States since the practice of immunization became widespread, the disease has not been conquered. Edsall has showed that the greatly decreased carrier rate in artificially immunized communities has been associated with a rising incidence of susceptibility as indicated by the Schick test. Artificially induced immunity wanes more rapidly due to the reduced exposure to diphtheria bacilli with the concurrent loss of its stimulating effect. Localized outbreaks in U. S. Army General Hospitals have been attributed to the introduction into the wards of unrecognized cutaneous diphtheria. A striking increase in the incidence of this disease was found in U. S. troops who entered areas with a high endemic diphtheria rate. It is highly probable that the number of carriers among military personnel returning from such areas is greater than among the general population. Myocardial tissue was studied from 205 fatal cases of diphtheria accumu-

lated at the Army Institute of Pathology. The presence or absence of myocardial disease was determined in each case from the few routinely taken sections. The frequency of peripheral neuritis was determined from the clinical records. There were 44 cases of myocarditis with neuritis, 6 with neuritis alone and 99 with myocarditis alone; 56 showed no such sequelae. Myocarditis occurred in 70 per cent of these fatal cases of diphtheria. Three-fourths of the deaths occurred from six to twenty-four days after the onset of the diphtheria. The incidence of both myocarditis and neuritis increased progressively with the duration of illness before death. Neither age nor color had any apparent relation to the development of either sequela. Peripheral neuritis appeared to develop later than myocarditis. The former appeared generally between the thirteenth and forty-fifth day, while the latter was found in 70 per cent of the patients who died between the sixth and twenty-fourth day. In this series cranial nerves were more susceptible than peripheral nerves. Pneumonia, usually of the patchy variety, was by far the most frequent complicating illness. In one-third of the cases the manifestations of myocarditis appeared at a time when the patient seemed well on his way to convalescence.

Pathologically the hearts were dilated, with flabby, pale or mottled musculature. Frequently they were enlarged, a finding which appears to be related to the presence and degree of myocarditis and not to myocardial hypertrophy. Microscopically, there was a primary toxic degeneration of the myocardial fibers. The inflammatory response, which culminates in scarring, appeared to be secondary to muscle injury. A shock-like state following diphtheria must be recognized as a frequent manifestation of myocardial weakness lest the vigorous administration of intravenous fluids to combat it result in a fatal termination. Treatment of the myocarditis should be directed at minimizing the work load of the heart for a period sufficiently long to permit healing of the lesions. Healing is always by fibrosis since true muscle regeneration does not occur. 24 references, 8 tables, 4 figures, 2 charts. —*Author's abstract.*

The Diagnosis of Mitral Insufficiency in Rheumatic Children *A.G. Kuttner and M. Markowitz: Irvington House, Irvington-on-Hudson, N. Y.* Am Heart J. 35:718-26, May 1948.

According to the criteria of the New York Heart Association, the diagnosis of mitral insufficiency should not be made in the absence of cardiac enlargement demonstrable by roentgenologic examination. Slight degrees of cardiac enlargement are, however, difficult to determine and different observers tend to disagree. The frequency with which apical systolic murmurs occur in normal individuals has made physicians skeptical as to their significance in rheumatic subjects. In children, the importance of the intensity of the murmur has not been emphasized because it was thought that the loudness might be related to the proximity of the heart to the chest wall. Better transmission

does not adequately explain variations in the intensity of murmurs heard in children of the same body build.

The prognosis of 144 rheumatic children adjudged to have mitral insufficiency in the absence of demonstrable cardiac enlargement on the basis of a loud, well transmitted apical systolic murmur was compared with that of 177 children with soft poorly transmitted apical systolic murmurs classified as potential and possible rheumatic heart disease. After an average follow-up period of eight years, 69 or 48 per cent of the former group had developed organic heart disease and 20 of these had died from their rheumatic infection or bacterial endocarditis. In contrast, 22 or 13 per cent of the 171 cases of potential and possible rheumatic heart disease had developed organic heart disease, and none had died. The striking difference between the two groups in the progression of the disease and mortality rate indicates that the intensity of the murmur is of prognostic significance. The diagnosis of mitral insufficiency based on a loud, well transmitted, apical systolic murmur, in the absence of demonstrable cardiac enlargement, is warranted in children.—*Author's abstract.*

Pulmonary Valvulotomy for the Relief of Congenital Pulmonary Stenosis. Report of Three Cases. *R. C. Brock, Guy's Hospital, London, England.* Brit. M. J. 4562:1121-26, June 12, 1948.

Inasmuch as the author feels that the Blalock operation is an indirect approach to relief of cyanosis in blue babies, he proposes a direct attack on the stenosed pulmonary valve by use of a special valvulotome. The instrument is introduced through the myocardium of the right ventricle and directed toward the pulmonary valve. A specially designed forcep is then introduced to dilate the valvular area. This procedure was performed in 3 patients ranging in age from 11 to 23 years. In 1, definite improvement followed, although cyanosis continued to appear on exertion. Another patient developed a postoperative embolic phenomenon involving the left leg and full activity was impossible; consequently, true evaluation of the result in this patient was not feasible. In the third, a hemiplegia developed after operation and its persistence also made it impossible to assess the actual functional improvement. In 3 other patients direct observation of the pulmonary valve was attempted by means of a cardioscope. This instrument was passed through the left pulmonary branch which forms a direct line with the main pulmonary artery. In only 1 of these patients was cardioscopy successful and the stenosis was found to be subvalvular. It was felt best that in the future cardioscopy should be done via the ventricular wall but in practice this was not actually accomplished because of the seriousness of the procedure. The author feels that valvular stenosis may be diagnosed at operation by external examination of the heart. In such instances, the pulmonary artery just distal to the obstruction is often dilated. The presence of a localized thrill at the val-

vular area is also suggestive of a valvular stenosis and is likely to be diffuse in the presence of a subvalvular constriction. Such preoperative assessment plus direct observation should provide enough information to decide if valvular stenosis exists or not. 10 references.—*R. N. Paul.*

(*The relief of stenotic values by valvulotomy is an approach now being explored in several surgical clinics and much progress may be anticipated. The operation here presented is not intended for the more common subvalvular lesion. The author believes that true valvular stenosis can be diagnosed at the time of operation. His report is preliminary in nature and improved methods may be developed from it. The author lists two drawbacks to the Blalock operation: the anastomosis may not grow in proportion to the child and the patent ductus arteriosus made at operation simulates an anomaly which has required treatment when occurring spontaneously. Similar objections may be raised to his method: there is no assurance that following valvulotomy the valves will not re-fuse and the procedure develops another anomaly in the form of a valvular insufficiency.*—ED.)

A New Anomaly of the Aorta. Left Aortic Arch with Right Descending Aorta. *Raphael N. Paul, Johns Hopkins Hospital, Baltimore, Md.* J. Pediat. 32:19-29, January 1948.

The aortic anomaly herein reported has not been previously described. It consists of a left aortic arch which, instead of descending in the normal fashion to the left side of the esophagus and trachea, courses retroesophageally immediately after the arch to descend on the right side of these structures. The anomaly was detected fluoroscopically by routine barium swallow during the preliminary work-up of 2 cyanotic children with congenital heart disease. Both patients were believed to have a tetralogy of Fallot and were operated upon. In 1 patient the pulmonary pressure was found to exceed the limit for successful completion of the Blalock-Taussig operation. Both patients survived operation and the peculiar course of the aorta was demonstrated at the time of surgery to exist as suspected preoperatively. The fluoroscopic findings in both cases were similar and characteristic. In the anteroposterior view, with the barium mixture, the esophagus deviated to the right as it does with a left aortic arch. Between the aortic knob and left border of the heart there was no cardiac or vascular (descending aorta) shadow to the left of the esophagus, whereas below this level the barium column was farther to the left than normally. The first finding suggested that the aorta was abnormally situated to the right of or behind the esophagus; the latter suggested that the aorta lay to the right of the esophagus and was displacing that structure to the left. In the oblique views, particularly the left anterior oblique, the esophagus was displaced anteriorly just as in a right aortic arch with retroesophageal aorta. The simple procedure of adminis-

tering barium mixture routinely during fluoroscopic examination of the heart and the awareness of this anomaly will probably lead to the recognition of other similar cases. A brief review of other anomalies of the aorta is also presented. 20 references. 7 figures.—*Author's abstract.*

5. *Chemotherapy, Drugs, Poisons, Physical Agents*

Aureomycin. A New Antibiotic. Results of Laboratory Studies and of Clinical Use in 100 Cases of Bacterial Infections. *Maxwell Finland, Harvey Shields Collins and Tom Fite Paine, Jr., Thorndike Memorial Laboratory, Boston City Hospital and Harvard Medical School, Boston, Mass.* J. A. M. A. 138:946-49, Nov. 27, 1948.

Preliminary laboratory work has indicated that a new antibiotic, aureomycin, is of low toxicity, is effective in vitro against a large variety of gram-positive and gram-negative bacteria, and is particularly effective in experimental infections with rickettsias and with viruses of the psittacosis-lymphogranuloma venereum group. Bacteriologic tests for sensitivity to aureomycin were carried out by tube dilution or streak plate method. Pathogenic strains of hemolytic streptococci, pneumococci, gonococci and meningococci were almost completely inhibited by aureomycin in concentrations of 1 microgram per cubic centimeter or less. Staphylococci and most strains of gram-negative bacilli, including typhoid and other Salmonella, were inhibited by 25 micrograms per cubic centimeter or less. Only strains of Proteus vulgaris and of Pseudomonas aeruginosa required from 100 to 250 micrograms per cubic centimeter for complete inhibition. There was no evidence of cross resistance with penicillin, streptomycin, polymyxin or bacitracin. On a weight basis aureomycin was less effective than penicillin against most of the coccic organisms but about as effective as streptomycin against most of the gram-negative bacilli.

The potency of aureomycin hydrochloride in a dry powder in sealed ampules and in capsules appeared unaltered for at least seven months at room temperature. It also retained its activity for long periods in solutions kept frozen at 20 C. Concentrated solutions (2 mg. per cubic centimeter) in distilled water at *p*H 4 retained their activity for over two weeks at 4 C. and at 37 C. Aureomycin was effective only against vigorously multiplying organisms but not against fully grown or resting cultures. It was much more effective in an acid than in an alkaline medium—the reverse of streptomycin. No significant tendency for the development of resistance to aureomycin in organisms was demonstrated either in vitro or in vivo. Resistant variants could not readily be obtained by exposure of large numbers of bacteria to high concentrations of aureomycin. All organisms of the same species iso-

lated from the same patient before, during and after treatment with aureomycin for varying periods up to one month or longer were equally sensitive to this antibiotic. Aureomycin appeared rapidly in the urine and was excreted continuously for two or three days after a single dose of 0.5 to 0.75 Gm. Excretion studies suggest that the optimal interval between oral doses should be about six to eight hours.

Clinical results are described in 100 cases with various bacterial infections. The usual dose in these patients (not precisely given) appears to have been 0.5 Gm. two to four times in twenty-four hours. With 66 patients with gonorrheal vaginitis the results were inferior to those with adequate doses of penicillin. In some patients with typhoid and Salmonella infections the results appeared favorable but were equivocal in most. In stubborn infections of the urinary tract the results were favorable and probably comparable, if not superior, to those obtained with streptomycin or sulfonamide drugs in similar cases. Infections with Proteus vulgaris and Pseudomonas aeruginosa, were not much affected. The only evidence of toxicity was the occurrence of loose bowel movements when large doses were given by mouth. Five patients with pneumococcic pneumonia and 1 with meningococcemia responded well. 4 references. 1 table.

Bacitracin. Methods of Production, Concentration, and Partial Purification with a Summary of the Chemical Properties of Crude Bacitracin. *Herbert S. Anker, Balbina A. Johnson, Joseph Goldberg and Frank L. Meleney, College of Physicians and Surgeons, Columbia University, New York.* N. Y. J. Bact. 55:249-55, February 1948.

Bacitracin is a neutral substance, water-soluble, nontoxic and relatively heat stable (fifteen minutes at 100 C.), recovered from a strain (Tracy 1) of Bacillus subtilis. It has been best obtained when the strain was grown in shallow layers of medium. A unit of bacitracin is tentatively defined as "the amount which, when diluted 1 to 1,024 under the assay conditions stated below, completely inhibits the growth of our stock strain (Chanin) of group A hemolytic streptococcus." A report is given on the assay, media for production, harvesting, concentration, purification and chemical properties of bacitracin. 6 references. 1 table.

(*Bacitracin promises to be therapeutically active against gram-positive organisms and the gonococcus and meningococcus.*—ED.)

Polymyxin. A Note on Experimental and Clinical Investigations. *E. B. Schoenbach, M. S. Bryer, E. A. Bliss and P. H. Long, Johns Hopkins University, Baltimore, Md.* J. A. M. A. 136:1096-98, Apr. 24, 1948.

Polymyxin is a new antibiotic isolated from Bacillus polymyxa. It has been found effective only against certain gram-negative organisms in vitro and in experimental inoculations of some of these or-

ganisms in mice. In vitro it is most effective in an acid medium and loses little of its activity in the presence of serum. Polymyxin is relatively heat stable. Shortly after intramuscular injection of the antibiotic it is detectable in the blood but does not appear in the spinal fluid, either in dogs in which high serum concentrations were present or in the one person with purulent meningitis who was treated with polymyxin. In humans, detectable amounts of the antibiotic began to appear in the urine twelve hours after initiation of intramuscular administration on a three-hourly schedule and it was excreted slowly. Polymyxin has been found considerably more toxic than either penicillin or streptomycin in the experimental animal. It also has been used in a few humans without toxic effect, except for possible drug fever, but the number of cases is too few for reliable conclusions. In certain experimentally produced infections with gram-negative organisms in mice, polymyxin appeared more effective than streptomycin. Thus far it has been impossible to produce a resistant strain from susceptible organisms in vitro. 7 references. 1 table.—*R. N. Paul.*

The Place of Oral Penicillin in Pediatrics. *J. H. Mosely, University of Birmingham, Birmingham, England.* Arch. Dis. Childhood 23: 93-97, June 1948.

Aqueous unbuffered penicillin was administered orally and intramuscularly to 40 infants and the subsequent serum levels measured. The three hour levels with oral penicillin were inferior to those with intramuscular penicillin but the five to eight hour levels were the same. It was concluded that oral penicillin is the method of choice in children less than 6 months old providing: (1) the dose is high; (2) mixed feeding has not been started; (3) diarrhea or vomiting is not present. 11 references. 4 tables.—*A. N. Evans.*

(*There are many factors, still unknown, which influence penicillin blood levels following oral ingestion. Until these are understood it may be unwise to treat infants with severe infections solely by the oral route.*—ED.)

Changes in the Bacterial Flora of the Throat and Intestinal Tract During Prolonged Oral Administration of Penicillin. *M. O. Lipman, J. A. Coss, Jr. and R. H. Boots, Presbyterian Hospital, New York, N. Y.* Am. J. Med. 4:702-709, May 1948.

The bacterial flora of the throat and intestinal tract was studied in 10 patients who were receiving oral penicillin in doses of 500,000 to 1,000,000 units per day over a prolonged period of time. Prior to treatment the flora of the throat in all the subjects was normal. After administration of penicillin there was a sudden change from gram-positive to gram-negative organisms. Coliform bacilli appeared in the throat culture and persisted, often predominating, throughout the course. On discontinuance of penicillin the gram-positive bacteria rapid-

ly reappeared in the throat cultures and the coliform organisms gradually disappeared. Although 75 per cent of the stool cultures were positive for streptococci before penicillin administration only 23 per cent were positive during therapy; these showed a relatively low sensitivity to the antibiotic. Some investigators have suggested the possibility of penicillin-resistant organisms developing on low dosage or prolonged administration of the agent. There was no evidence in this series that such resistance developed. 6 references. 7 tables.—*R. N. Paul.*

Further Experiences with Streptomycin Therapy in United States Army Hospitals. *Edwin J. Pulaski (Major, M.C., A.U.S.) and Sam F. Seeley (Col., M.C., A.U.S.), Brooke General Hospital, Fort Sam Houston, Tex.* J. Lab. & Clin. Med. 33:1-14, January 1948.

The results of therapy of 1,200 patients in United States Army hospitals have been summarized and analyzed. Streptomycin is: (1) useful in properly selected urinary tract infections, though poorer results are achieved in paraplegics than in nonparaplegic subjects; (2) useful in urethritis of specific and nonspecific origin but of little or no value in infections of the prostate or epididymis; (3) of definite protective value before and after surgery of the urinary tract; (4) the drug of choice in the treatment of tularemia; (5) extremely valuable in bacteremias including gram-negative subacute bacterial endocarditis; (6) of great value in properly selected cases of meningitis, for which it is often given in conjunction with sulfadiazine; (7) useful in otitis externa, otitis media and mastoiditis caused by streptomycin-sensitive organisms. Results in chronic brucellosis, typhoid fever, bronchiectasis, empyema and amebic colitis have not been encouraging. Administration of 3 Gm. streptomycin parenterally and 6 Gm. sulfadiazine orally for an average of twenty-one days benefited 4 of 7 patients with acute brucellosis; 2 others relapsed seven to twelve weeks after treatment and 1 did not respond. Streptomycin is useful in certain forms of gram-negative bacterial pneumonia. It has showed promise in the treatment of bacillary dysentery refractory to sulfonamides and has had some value in active idiopathic ulcerative colitis with secondary infection due to susceptible organisms. Results in diffuse peritonitis are likely to be particularly good when streptomycin is used in conjunction with penicillin. It is not usually of any value in hepatic and biliary tract infections associated with obstruction, since it does not reach the infected tissues. It is of no more value in the treatment of soft tissue infections and battle-incurred wound infections than any other antibiotic or chemotherapeutic agent; that is, it is useful only in conjunction with indicated surgical procedures. The results in pharyngitis, laryngitis and bronchogenic tuberculosis are in general encouraging. Streptomycin has showed promise in miliary tuberculosis and in tuberculous meningitis. Drug fastness to this antibiotic is specific and not carried over to other chemotherapeutic agents. 15 references. 1 table.—*Author's abstract.*

Streptomycin in the Treatment of Tuberculosis. Current Status. *Report to the Council on Pharmacy and Chemistry, Prepared by the Streptomycin Committee, Veterans Administration.* J. A. M. A. 138: 585-93, Oct. 23, 1948.

The most important progress in the therapeutic understanding of streptomycin in tuberculosis can be contained in the following four statements: (1) Treatment has been completed on enough patients (about 2,800), and their posttreatment course has been observed for sufficient time to permit some definite statements. (2) A reduction in daily dosage from 2.0 to 1.0 Gm., and a further reduction to 0.5 Gm., has been accompanied by a significant reduction in toxic manifestations. (3) With the reduced dosage of 1.0 Gm., and apparently with the further reduction of 0.5 Gm., there has been no loss of therapeutic efficacy, and there is no loss if the daily dose is divided into two rather than five injections. (4) It is possible to take a more optimistic view of the treatment of tuberculosis of bones and joints and of the genitourinary tract than was the case a year ago.

Studies are now under way to test the effectiveness of a shorter treatment period, one hundred and twenty, sixty or even forty-two days. Now that the disadvantage of toxicity is alleviated by reduced dosage the main problem of streptomycin therapy lies in the development of resistance by the tubercle bacilli to streptomycin. Ninety-seven per cent of 745 cultures prepared at the beginning of treatment failed to grow when they were exposed in vitro to 10 micrograms or less of streptomycin per cubic centimeter of medium and the vast majority failed to grow in 1 microgram per cubic centimeter. After treatment was started, particularly after it had been continued for thirty to forty-five days, an increasing percentage of positive cultures grew in more than 10 micrograms per cubic centimeter. After one hundred and twenty-five days of treatment, about 70 per cent of the cultures did so. Successive cultures from the same patient usually grew in progressively higher concentrations of streptomycin as treatment was continued. Once resistance became acquired it was apparently permanent, within the time limits of the study. However, there is only 1 recorded instance of a culture of Mycobacterium tuberculosis having become dependent on streptomycin to maintain growth. There is an accumulating mass of evidence to suggest that the development of a resistant organism indicates that further treatment with streptomycin is useless and conceivably dangerous. That improvement is most rapid during the first two months, before resistance has developed, argues in this direction, as does the apparent parallelism in timing between the observation of a positive culture and the occurrence of a relapse. The public health hazard which this involves is rather obvious: all new cases of tuberculosis which are contracted from streptomycin-resistant patients become ipso facto unsuitable for treatment with streptomycin. 9 references, 9 tables, 8 figures.

Sulfamerazine as Prophylaxis in Hospitalized Infants. *Teodoro Zenteno and Oscar Correa. B.* Rev. chilena de pediat. 6:443-54, June 1948.

An experiment is reported on the prophylactic use of sulfamerazine for hospitalized infants up to 2 years of age. Sulfamerazine was given to 31 infants in a single daily dose and 26 infants were taken as controls. The study continued over five months, during which time the children of both groups were under the same environmental, feeding, medical and nursing care. The sulfamerazine was well tolerated and no toxic reactions were encountered. A lower incidence of infections was observed in the group receiving sulfamerazine (18.13 per cent) than in the control group (27.46 per cent), a difference which is statistically significant. 12 references. 2 tables. 1 figure.

Salicylate Therapy in Children. *Giorgio F. Maggioni, The Children's Hospital and University of Birmingham, Birmingham, England.* Arch. Dis. Childhood 23:40-47, March 1948.

Some observations are presented on the fate of salicylate drugs in normal and rheumatic children. The methods used for the estimation of salicylate were, with slight modifications, those of Brodie, Udenfriend & Coburn (1944) for blood and those of Lester, Lolli & Greenberg (1946) for urine. The absorption rate of sodium salicylate in water is rapid in children. After fifteen to twenty-five minutes it can be detected in the blood and urine. The peak in the blood level is reached in from one and a half to two hours and decreases slowly. Aspirin and calcium aspirin are absorbed more slowly. The duration of excretion is longer with a larger dose. The time required for complete excretion of a 1 Gm. dose of sodium salicylate was thirty to thirty-six hours in a normal child, whereas with 0.5 Gm. excretion was complete in twenty-four hours. The danger of any cumulative effect and the occurrence of toxic symptoms is therefore small. On stopping administration after ten weeks' treatment, the drug completely disappears from the blood and urine in forty-eight to seventy-two hours. After oral sodium salicylate, practically no differences were observed between the free salicylate of plasma and total salicylate after hydrolysis of plasma. After a single dose or after continuous treatment with aspirin, differences were discovered between total salicyl and free salicyl amounting to 10 or 15 per cent, which is considerably more than estimation errors.

The quantity of salicylate recovered in urine after a single dose in normal controls was about 75 per cent of intake. In children with acute rheumatism under continuous treatment the daily recovery was about 50 to 60 per cent of the amount taken. Absorption of sodium salicylate without sodium bicarbonate given per rectum was usually more than 50 per cent of the amount instilled. The quantity of sodium salicylate which must be given to children to attain a blood level of at

least 25 mg. per 100 ml. was from 0.12 to 0.18 Gm. per kilogram of body weight per day. This dose (given every four hours, orally) showed individual daily variations in blood levels of 10 to 15 mg. per 100 cc. Sodium salicylate plus sodium bicarbonate (1:2) taken by mouth produced within fifteen minutes the same level in blood as without bicarbonate but the excretion of salicylate in the urine was increased; the blood level decreased more rapidly than without sodium bicarbonate. After four hours the level in the blood was sometimes half of that attained without sodium bicarbonate. There seemed to be a relationship between the proportion of the sodium bicarbonate given with the salicylate and the rapidity of output. The greater the proportion of sodium bicarbonate, the quicker the excretion. Vomiting after administration of salicylate was not necessarily related to the salicylate blood level. A mixture of equal parts of sodium salicylate and sodium bicarbonate (1:1) given every four hours is sufficient to avoid gastric distress without exerting any appreciable influence on the excretion; the proportion may be 1:2 if the interval is reduced to two hours. 4 references.

Salicylate Tolerance and Toxicity in Children. *Emanuel Dubow and Nathaniel H. Solomon.* Pediatrics 1:495-504, April 1948.

Salicylates have recently been given in increasing doses in attempts to modify the rheumatic process. Aside from considerations of their effectiveness in this regard, problems have arisen concerning what consitutes a safe dosage and what may be expected as far as toxic effects are concerned. Scrutiny of the current literature reveals a wide divergence of opinion and conflicting results concerning toxic manifestations and blood salicylate levels obtained. Various reports may be noted of fatal salicylate intoxication following what was thought to be rather moderate dosage.

The following conclusions were reached as a result of clinical and chemical studies on a group of children: Dosages of 0.15 Gm. of salicylates per kilogram of body weight per day caused toxicity in the large majority of cases. The children who became toxic manifested hypernea, lassitude, anorexia and tinnitus. Blood salicylate levels in these toxic cases usually rose above 35 mg. per cent, and blood CO_2 values fell rapidly. Especially noteworthy was the fact that electrically measured *p*H values of the blood serums rose during early salicylate intoxication, even while CO_2 content was falling to strikingly low levels. This demonstrates that previous concepts of an early acidosis in salicylate intoxication were incorrect and consequently alkali therapy at this point is contraindicated. Low CO_2 values may readily result from a blowing-off effect due to salicyl-initiated hyperpnea. Acidosis may result from long standing toxicity, due to primary effects such as sodium loss in the urine and secondary effects such as increased formation of acid metabolites. In this event the indication

for alkali therapy is that both CO_2 content and serum *p*H are depressed.

Dosages of 0.125 Gm. per kilogram of body weight may be given with impunity for extended periods of time. Acetylsalicylic acid seemed to be more toxic than sodium salicylate. Very young children do not attain high blood levels with this dosage, probably because of increased excretion. Salicylate tolerance is intimately concerned with fluid and renal function. In toxicity, all efforts should be made to correct and bolster these. 20 references. 1 table. 4 figures.—*Author's abstract.*

Congenital Morphinism. A Rare Cause of Convulsions in the Newborn. *Meyer A. Perlstein, Chicago, Ill.* J. A. M. A. 135:633, Nov. 8, 1947.

Congenital morphinism is an uncommon cause for convulsions in the newborn. It is most often encountered in infants delivered of morphine-addicted mothers. Withdrawal symptoms may appear within twenty-four hours after birth. Irritability, yawning and sneezing are soon followed by weakness, anorexia, vomiting and diarrhea. Maximal intensity is reached by the third day, with tremors, coma and convulsions. Death results in most instances. A morphine-addicted mother was delivered of a full term infant. The infant presented withdrawal symptoms on the third day. Treatment with phenobarbital sedation was successful. 8 references.—*B. J. Shuman.*

Nephrotic Syndrome Occurring During Tridione Therapy. *Henry L. Barnett, Donal J. Simons and Roe E. Wells, Jr., New York Hospital and Cornell University Medical College, New York, N. Y.* Am. J. Med. 4:760-64, May 1948.

Eight months after the onset of Tridione therapy (0.32 Gm. three times a day) for petit mal epilepsy, a 16 year old girl developed a characteristic nephrotic syndrome characterized by edema, proteinuria, low serum albumin and total protein and elevated serum cholesterol. Tridione was discontinued and on bed rest and low salt and fluid intake the nephrosis entirely cleared five weeks later. Because of recurrence of petit mal attacks which had previously been well controlled by Tridione, the drug was again given on two other occasions in the same dosage. After two months of treatment a typical nephrotic syndrome developed each time which again cleared completely five to six weeks after discontinuance of therapy. During one episode transient hypertension and microscopic hematuria were noted. Careful renal function studies were performed during remissions. These included measures of glomerular filtration rate (mannitol), effective renal blood flow, maximal tubular excretory capacity (para-aminohippurate) and urea clearance. All tests were normal except for a transient diminution in glomerular filtration rate and urea clearance dur-

ing the third period of nephrosis. A five month follow-up, after final discontinuance of Tridione, revealed no persistence of nephrotic syndrome or evidence of permanent renal damage. The striking temporal relationship of the nephrotic syndrome with Tridione administration, as well as the absence of proteinuria and presence of normal serum protein and cholesterol during periods of remission, suggest Tridione as the etiologic factor rather than the naturally occurring disease. 8 references. 1 table. 1 figure.—*H. M. Goldstein.*

6. Clinical Pathology

On an Important Source of Error in Determinations of Serum Proteins (*Sur une importante cause d'erreur dans le dosage des protides du serum*). *J. Nordmann, Surgical Clinic, Salpetriere, Paris, France.* Presse méd. 55:830, Dec. 6, 1947.

The estimation of the level of serum proteins has consistently gained in importance in the last three decades. Both from the prognostic and the therapeutic standpoint it is essential that an accurate determination be made. As an important source of error, stasis of blood needs to be emphasized. In stasis, water and crystalloids readily pass from the vascular compartment into the tissue fluids, while the colloids, especially protein molecules, remain within the vascular lumen. This leads to a relative concentration of the latter. It is clear that any tourniquet should be avoided if accurate protein determinations are desired. This is brought out well in experiments relating the relative increase in serum protein levels to the time and the pressure of occluding stasis. Thus, if stasis of 15 mm. Hg is applied for six minutes, the total serum protein rises from a normal level of 7.3 Gm. per cent to 9.5 Gm. per cent. Under the same conditions the serum albumin level rises from 4.1 Gm. per cent to 4.7 Gm. per cent. With a stasis of 11 mm. Hg applied for ten minutes the total protein level increases from 6.8 to 7.9 Gm. per cent, the serum albumin level from 3.4 to 4.1 Gm. per cent, while the albumin-globulin ratio increases from 0.99 to 1.09. Under similar conditions the level of urea or chlorine remains entirely constant. Thus it is essential that stasis be avoided when blood is drawn for serum protein determinations.

(*Stasis of this degree is disturbing in many other chemical analyses. Stasis during venipuncture should be avoided as far as practicable under all circumstances.*—ED.)

A New Technique for the Direct Examination of Cerebrospinal Fluid for Koch's Bacillus (*Una nuova tecnica per la ricerca diretta del b. di Kock nel liquido cefalo-rachidiano mediante centrifugazione*). *P. Periti and G. Pasquinucci, University of Florence, Florence, Italy.* Riv. clin. pediat. 46:39-41, January 1948.

A tube, the bottom of which is a removable glass disk, has been

devised to facilitate the direct examination of cerebrospinal fluid for the tubercle bacillus. About 10 cc. of cerebrospinal fluid are collected directly into the assembled device and diluted to the top (35 cc.) before formation of a reticulum. Dilution decreases the specific gravity of the liquid medium and makes separation of bacilli easier. The tube is centrifuged at 2,000 to 3,000 R.P.M. for twenty minutes, after which the supernatant fluid is carefully removed and the tube disassembled. The glass disk is attached to a slide with balsam and stained according to the Ziehl-Neelsen method. This technic is simple and highly reliable, having been checked by culture and guinea pig inoculation. 2 figures. —*A. M. Bongiovanni.*

(*The tube is manufactured by Ditta Saccardi, Via Pepi* 68, *Florence, Italy. The price is not stated.*—ED.)

Enhancement of Growth of a Strain of M. Tuberculosis (Var. Hominis) by Streptomycin. *George A. Spendlove, Martin M. Cummings, William B. Fackler, Jr. and Max Michael, Jr., Atlanta, Ga.* Pub. Health Rep. 63:1177-79, Sept. 3, 1948.

A strain of Mycobacterium tuberculosis is described, the growth of which is markedly enhanced by the presence of streptomycin in the culture medium. This strain was isolated from the sputum of a patient who had received streptomycin for treatment of pulmonary tuberculosis. The patient's infection exhibited rapid progression during the course of streptomycin therapy. 6 references.

(*This observation of adaption of a strain of the tubercle bacillus to streptomycin is not unique. Its significance to therapy and epidemiology is obvious.*—ED.)

Titer of Antistreptolysin O In Human Serum and Cerebrospinal Fluid. *Walter W. Igersheimer, Tufts College Medical School, Boston, Mass.* Am. J. Dis. Child. 75:65-67, January 1948.

The antistreptolysin O titer of cerebrospinal fluid and its quantitative relation to changing serum titers was investigated. Of 28 infants and children studied, 15 had had no recent streptococcus infection and their antistreptolysin titers in serum and spinal fluid were low (0 to 100 units). The remaining 13 had elevated serum levels (125 to 2,500 units), some with positive throat cultures for beta hemolytic streptococci. The cerebrospinal fluid titers were low in all, less than 50 units. Cerebrospinal fluid titers did not rise in the presence of elevated serum antistreptolysin O levels, indicating a barrier mechanism. 3 references. 2 tables.—*A. M. Bongiovanni.*

A Comparative Study of Bile, Marrow, Blood, Stool, Urine Cultures and Widal Reaction in Typhoid and Parathyphoid Fevers (An Analysis of 31 Cases). *Chao-chi Ling, John Liu and Tze-yin Chen, National Medical College of Shanghai, Shanghai, China.* Chinese M. J. 66:66-78, February 1948.

Marrow culture and bile culture were found to be the most useful, followed by blood culture, stool culture and, lastly, urine culture. Of the 31 patients 25 yielded positive cultures of the marrow, 25 of the bile, 14 of the blood, 9 (of 28) of the stool and 6 (of 27) of the urine. Thus blood culture is useful in the early weeks of the disease during the febrile period; marrow culture and bile culture are also useful in the late weeks of the disease and may even be positive during the apyrexial period. Positive marrow or blood cultures signify systemic infection, whereas with positive bile, stool or urine cultures the possibility of the carrier state has to be considered. The Widal reaction at best affords indirect evidence of enteric infection; its many limitations are enumerated. 20 references. 8 tables.

Routine Blood Cultures in Pediatrics. *E. S. King, Bowman Gray School of Medicine and Wake Forest College, Winston-Salem, N. C.* North Carolina M. J. 9:30-34, January 1948.

The number of cultures required to establish the presence of bacteremia varies widely. The author makes two or three cultures a day for two or three days. This method favors quick diagnosis and the early institution of specific treatment. Between 1942 and 1946, blood cultures were made from 370 children in the North Carolina Baptist Hospital. The incidence of bacteremia was 6.2 per cent. Staphylococci were found thirteen times, alpha streptococci five times, pneumococci twice, and beta hemolytic streptococci, meningococci and Bacillus subtilis once each. A new organism was encountered in 2 patients. This organism, Streptococcus sanguis, has not been found to cause any disease process except subacute bacterial endocarditis. It possesses certain physiologic and serologic characteristics which distinguish it from other green streptococci. It constitutes about one-third of all types identified from a large group of alpha streptococci. One of its most important therapeutic properties is its greater resistance to penicillin. Standard sensitivity tests show it to be resistant to concentrations as high as 5 units per cubic centimeter, whereas many other species of alpha streptococci yield to penicillin in concentrations of 0.5 unit or less per cubic centimeter. 12 references. 1 table.

7. Endocrine System

Parathyroid Hemorrhage with Tetany in Infancy (*Apoplessia delle paratiroidi in lattante con sindrome tetanica*). *Anselmo Calamari, University of Florence, Florence, Italy.* Riv. clin. pediat. 46:19-26, January 1948.

An 8 month old female with a history of generalized convulsions for one week, died during an attack of tetany with intractable laryngospasm. The four parathyroid glands appeared cystic and revealed extensive hemorrhage of recent origin with pyknotic changes of the parenchymal cells. This rare syndrome has been previously attributed to trauma at birth. In this instance local anaphylactic shock or a basic infectious factor similar to meningococcemia in the Waterhouse-Friedricksen syndrome are hypothesized. 8 references. 4 figures.—*A. M. Bongiovanni.*

(*Sudden death in infancy due to a sequence of events similar to the above may not be so rare as generally believed and merits careful study of the parathyroid glands. Unfortunately death occurred within a few hours of observation and serum calcium levels were not obtained. There was no evidence of a bleeding tendency.*—ED.)

Investigations and Considerations of an Epidemic of Acute Goiter in Tuscany During 1942 (*Alcune ricerche e considerazioni sopra una epidemia di gozzo acuto osservata in Tosacana nel* 1942). *Lelio Nassi and Anselmo Calamari, University of Florence, Florence, Italy.* Riv. clin. pediat. 46:65-82, February 1948.

In the district of Montesperoli, Tuscany, the most extensive epidemic of acute goiter to be recorded occurred in the fall of 1942. The incidence was highest in the age group 4 to 6 years. There was no sex difference. All patients lived in rural areas. Of 663 school children 342 appeared to have enlarged thyroid glands. Ten cases from 4 to 12 years of age were studied. The basal metabolic rate was normal in all (minus 8 to plus 8), as were the blood sugar (87 to 98 mg. per 100 cc.), blood cholesterol (110 to 142 mg.), calcium (9.5 to 10.4 mg.), phosphorus (4.6 to 5.1 mg.), potassium (15.7 to 23.5 mg.), and leukocyte differential counts. Within a few months the thyroid enlargement disappeared in almost all cases. The disappearance did not seem hastened by small doses of iodine given to some. Clinical signs of thyroid disease were at no time evident. At the onset pharyngitis and cervical adenopathy were frequently reported. The episode was benign in contrast to other reported epidemics, where definite thyroid dysfunction was encountered. A basic endocrine lability and the existence of latent goiter in the populace of Tuscany has previously been attributed to the low iodine content of its water and minerals. This has long been recognized in the territory as sporadic goiter. During the war

the importation of iodine-containing foods was not possible. The possibility of an infectious agent acting on the described background may be hypothesized as the direct provocative factor. This hypothesis is supported by the nature of the onset, the appearance of cases from other areas following exposure to individuals from Montesperoli, and other recorded studies indicating experimental transmission of such a disease. 21 references. 1 table.—*A. M. Bongiovanni.*

8. *Eye, Ear, Nose and Throat*

The Pediatric Approach to Tonsillectomy. *J. Alison Glover, Kent, England.* Arch. Dis. Childhood 23:1-6, March 1948.

A comparison of the frequency of tonsillectomy in different parts of England reveals startling differences in rates that are unrelated to environmental factors. Since the variation seems to depend on medical opinion, the validity of the various indications is reviewed. Direct examination of the tonsils as a criterion for removal is not reliable. Size is of no clinical importance unless there is real obstruction, which is rare. Nonetheless slight enlargement alone was given as the only indication in 31 per cent of a series. The diagnosis of diseased tonsils on the basis of congestion, debris in the crypts or other such factors is also not warranted. Such conditions are manifestations of the purposeful function of tonsils in arresting invading organisms. Repeated attacks of acute tonsillitis constitute the most reliable indication. Frequent colds do not justify the operation. Indeed, the frequency of colds is slightly increased in schools with high tonsillectomy rates. The same tendency is observed with otitis, an acute attack of which often occurs directly after tonsillectomy. Removal of the tonsils for sinusitis is not logical. Bronchitis and pneumonia do not appear to diminish in frequency following tonsillectomy. No beneficial effect is observed in asthma or other allergic conditions. The operation does not prevent or arrest nephritis and may predispose to it. Its value in preventing or curing rheumatic fever is dubious and investigation fails to demonstrate protection against rheumatic fever when operation is performed before 5 years of age. Further critical and controlled studies of the indications for and results of tonsillectomy are needed, with particular reference to optimal age for removal. 37 references. 1 table.—*A. M. Bongiovanni.*

(*Every thoughtful pediatrician is appalled at the readiness with which physicians advise tonsillectomy and the eagerness with which parents accept this advice. Often the procedure is carried out at the urging of the school nurse or of the parents themselves. The most that can be said for the operation is that it carries a low mortality rate. As emphasized by the author, tonsils should be evaluated according to the amount of trouble they give and not by their appearance. Especially in children under 5 years, removal is seldom indicated. Mouth*

breathing and repeated attacks of otitis media or purulent rhinitis are usually indications for adenoidectomy alone. Like any other operation, tonsillectomy should be performed only for specific indications. The number of such indications is rapidly diminishing as the old concepts of focal infection become less popular.—ED.)

9. Gastrointestinal System

Stomatitis in Infants Caused by B. Mucosus Capsulatus. *Robert L. Faucett and Herbert C. Miller, University of Minnesota Medical School, Minneapolis, Minn.* Pediatrics 1:458-61, April 1948.

Six cases of stomatitis resembling thrush are reported. The disease differed from thrush in appearance, etiology and response to treatment. The lesions consisted of membrane-like patches which tended to be more confluent and were heavier and dirtier-appearing than seen in thrush. A gram-negative organism resembling Bacillus mucosus capsulatus culturally was isolated from all 6 cases. The organism did not quell with Friedländer type A or type B serums. Three of the six strains of the organism were immunologically identical. The remaining three were not tested. Monilia albicans was recovered in combination with the above organism in 3 of the cases. These cases showed a poor response to local treatment but responded dramatically to sulfadiazine by mouth in a dosage of 1 grain per pound of body weight per day. In vitro the growth of the organism was inhibited by 1.25 mg. per cubic centimeter concentration of sulfadiazine. Penicillin was ineffective. 1 reference. 1 figure.—*Author's abstract.*

Lye Poisoning in Children. *G. W. Kernodle, Grant Taylor and W. C. Davison, Durham, N. C.* Am. J. Dis. Child. 75:135-42, February 1948.

A review of 136 cases of lye ingestion is presented to reemphasize the importance of early dilation in the prevention of esophageal stricture. Twenty patients adequately treated by this method did not develop any evidence of esophageal stricture. For 5 patients esophageal strictures developed because the treatment was not sufficiently prolonged. Ninety-seven patients showed definite evidence of esophageal stricture when first seen at the hospital with the history that only 5 of these had had any attempt made at esophageal dilation. Symptoms of obstruction occurred in the majority of cases within one month following the ingestion of the alkali. The stricture was more frequently located in the upper third of the esophagus. Sixteen of 102 patients with stricture died during the course of therapy from such conditions as perforation of the esophagus following direct esophagoscopic ex-

aminations or attempted dilation, mediastinitis, esophagotracheal fistula or empyema. One patient died during the acute reaction following the ingestion of a large quantity of lye. 3 references. 5 tables.—*Author's abstract.*

Early Treatment of Esophageal Burns in Children. *P. M. Rassudov.* Am. Rev. Soviet Med. 5:101-105, April 1948.

This is a presentation of the method and results of early treatment of lye burns of the esophagus. Bougie dilatations are started as early as the third day and not later than the twenty-first day after injury. Dilatations are performed twice each week with an 8 mm. bougie. Liquids and cereals are fed for the first week and then regular diets without restriction of coarse foods. In 1943 and 1944, 422 children were treated by this method. Ninety per cent recovered and 10 per cent had fair results in the first six weeks of treatment; there were no perforations or fatalities. Six children still receive bougie dilatations, 3 children have a gastrostomy and 2 had recurrences of esophageal strictures.—*B. J. Shuman.*

(*These Russians have the right idea. Too often such children are permitted to develop strictures before dilatations are begun. Much crusading on the part of the pediatrician is still needed on this point.* —ED.)

A Review of 112 Cases of Congenital Hypertrophic Pyloric Stenosis. *R. McLaren Todd, Queen Elizabeth Hospital for Children, London, England.* Arch. Dis. Childhood 22:75-85, June 1947.

A clinical study of 112 cases of congenital hypertrophic pyloric stenosis was made to evaluate medical and surgical treatment. The routine medical treatment consisted of milk feedings every three hours with 3 to 6 cc. of Eumydrin (1:10,000 aqueous solution) one-half hour before feedings. Trasentin suppositories were used in 2 cases but were less effective than Eumydrin. Dehydration was corrected by clyses of 4 per cent glucose in 0.18 normal saline. Gastric lavage was performed twice daily until there was no gastric residue. If vomiting had been excessive, ammonium chloride, 0.12 Gm., was given three times daily to combat alkalosis. Of the 112 cases, 95 responded to this medical treatment in five to ninety days. Five responded to Rammstedt's operation after Eumydrin had failed and 12 died. Nine of the deaths occurred in infants weighing less than 6 ½ pounds. Severe dehydration was present in all. Some of these infants might have been saved by early operation. Follow-up studies after eleven to thirty-two months revealed no evidence of impairment of physical or mental development. A considerable number showed delayed emptying time of the stomach, proportional to the severity of original symptoms as judged by length of hospital treatment. The author advises that medical treatment be tried first with infants who are not severely dehydrated or with birth weight above 6 ½ pounds. If medical treatment proves ineffective after seven

days, Rammstedt's operation should be undertaken. 11 references. 8 tables.—*M. F. Leonard.*

(*As pointed out by the author of this paper, surgical treatment of pyloric stenosis is highly satisfactory in centers where skilled surgical teams are available. Preoperative and postoperative care are even more important than the surgical procedure itself. In this country surgery is preferred. The chief hazard of medical management comes from the risk of infection in debilitated infants hospitalized for long periods. Where skilled surgical care is not available, especially when good nursing care can be arranged in the home, the author's criteria and methods will be valuable.*—ED.)

On the Apple-Treatment in Diarrhea in Childhood (*Om Aeblebehandl. af Diarrhoer nos Børn*). *Jørgen Koch, The Children's Hospital, Fuglebakken, Copenhagen, Denmark.* Ugeskr. f. laeger 109:198-201, 1947.

Forty children aged 9 months or more suffering with acute diarrhea or acute exacerbation of chronic diarrhea were treated with a commercial dried apple preparation with the same good results as another group of children treated with fresh mashed apples. 23 references.—*E. W. Flensborg.*

10. Genitourinary System

The Ulcerated Urethral Meatus in Male Children. *Paul Freud, New York Medical College, New York, N. Y.* J. Pediat. 31:131-41, August 1947.

Superficial ulceration at the external urethral meatus is common in male infants and children if the tip of the glans is exposed to irritation. Hence it is much commoner in circumcised children. Voiding may be incomplete due to crusting over the meatus or to pain and inhibition of urination when the urine reaches the ulcerated area. The lesions tend to heal with some scarring and to recur. Stricture at the external meatus may result in serious retention of urine and even renal failure. Ammoniacal dermatitis is usually present as well. In almost all the author's 41 cases, the anteroposterior diameter of the urethral opening was less than 3 mm. This narrowing is believed to predispose toward ulceration at the meatus. Whether or not such ulceration can be a primary cause of serious narrowing is not known. Novocaine locally is recommended for acute cases to permit painless urination. Voiding in a warm bath can also be tried. Bland ointments locally will inhibit reformation of crusts and facilitate healing. Dilatation or meatotomy may be necessary for the more constricted openings. The diapers are washed in saturated boric acid solution, and the dermatitis is protected by zinc ointment with added tar or cod liver oil. 19 references. 1 table. 7 figures.

(This abstract is a fresh condensation of a paper already summarized in the QUART. REV. PEDIAT. *3:198, May 1948. The author of the original article has written in to complain of certain errors of omission and commission, and so we have done the job over. The* QUARTERLY REVIEW OF PEDIATRICS *makes every effort to insure accuracy in its abstracts. Out of the several thousand articles abstracted thus far, this is only the second time that such criticism has come in. This is perhaps not such a bad record in view of the immense quantity of medical literature with which the Editorial Staff has to deal. Every sentence in every published paper contains or should contain an important idea essential to the development of the observations. When an abstracter condenses someone else's report, his judgment of what is of less importance and therefore omissable may not necessarily be the same as that of the original author. The chief purpose of an abstract journal like this one is to stimulate the reading of the original scientific articles.*—ED.)

11. Growth, Puberty, Adolescence

Paranatal Factors Affecting Adjustment in Childhood. *Stuart Shelton Stevenson. Harvard School of Public Health, Boston, Mass.* Pediatrics 2:154-62, August 1948.

In an attempt to determine those paranatal factors which may affect adjustment in childhood, 226 children have been studied. Accurate, extensive data are available concerning the mothers' obstetric histories, the neonatal periods and the mental and emotional make-ups. General physical condition during the first two days of life was evaluated as good or poor. General adjustment to environments through at least 5 years of age was also rated independently, judged by the progress notes of psychologists, pediatricians, social workers, and nurses, and by parents' comments. Data concerning the child's gestation, birth, neonatal period, intelligence, and family situation were then studied.

Table I shows a highly significant relationship between childhood maladjustment and poor physical condition in the first days of life.

TABLE I.—*Adjustment Ratings of 226 Children With Reference to Physical Condition During the First Two Days of Life*

	Good Physical Condition (73.9% of children)		*Poor Physical Condition* (26.1% of children)	
	Number of cases	Percentage	Number of cases	Percentage
Well Adjusted	104	62.3	25	42.4
Medium Adjusted	31	18.5	11	18.6
Poorly Adjusted	32	19.2	23	39.0
	167	100.0	59	100.0

When such factors as toxemia, primiparity, long labor, abnormal delivery, prematurity, twinning, cyanosis during the first 12 hours of life, need of resuscitation or an appreciable interval between birth and establishment of respiration, are tabulated, it is found that each of these factors results in an increased incidence of children who are in poor physical condition in their neonatal periods. However, the relationships showed in Table I are maintained to varying degrees in the presence of each of these factors. This suggests that any of the factors may be responsible in part for the physical condition of the newborn infant but that no one of them alone is critically causative of childhood maladjustment. Firstborn children and only children show a greater incidence of maladjustment following good physical condition in the first days of life, as is to be expected. However even within these two groups of children, the relationships showed in Table I are maintained. The percentage of children in good physical condition in the neonatal period decreases slightly as the intelligence quotient decreases but again the relationships of Table I are maintained at different levels of intelligence.

Among the 226 children, 92 were siblings in 41 families. There was no consistency of neonatal condition or childhood maladjustment within a given family group. This suggests that environment was not a major factor in determining the adequacy of their adjustment. It may be concluded that the child's physical condition during his first days of life may affect his adjustment in later childhood and that several paranatal factors may influence this physical condition. It is to be hoped that these factors may be studied with a broader perspective for their possible effects beyond the first days of life. 23 references, 5 tables.

(*At the start of his discussion Dr. Stevenson says, "A significant relationship between the physical condition of the newborn infant and his adjustment to his environment in childhood has been demonstrated. In considering this relationship, it is imperative that associated factors be clearly distinguished from causative factors." It is to be hoped that the reader will keep this distinction clearly in mind and will realize that the "significant relationship," referred to above, implies only statistical significance in the association between the estimates of physical condition at birth and the adequacy of early childhood adjustments. The possible causative or dynamic factors which determine a child's adjustment in the first 5 to 8 years of life are, obviously, both numerous and complex. In his attempt to sort out and analyze a few of these factors Dr. Stevenson is to be commended. It seems probable, however, that only by the most painstaking and thorough study of each individual's development in his own genetic and environmental settings shall we be able to evaluate the importance of each factor involved. A larger series of cases may settle some of the arguments.*—ED.)

12. History, Biography, Antiquities

Multiple Births in the American Colonies. *Ernest Caulfield, Hartfield, Conn.* Paper read at Joint Meeting of the American Pediatric Society and the Canadian Society for the Study of Diseases of Children, Quebec City, Que., May 24, 1948.

Boston Town Records from 1660 to 1729 reveal 163 pairs of twins to 15,797 known confinements or a ratio of 1:96.9. The latest published U. S. ratio (1940-1944) was 1:95.8. It is estimated that 500 sets of triplets were born before 1775. Records of 89 sets have been found, mostly in colonial newspapers. Other sources yield enough additional information to make the statistics on 50 sets fairly complete. The youngest mother was 18; the eldest "near 50". About one-third of the mothers were between 36 and 40. About one-third had twins in addition to triplets. One-half had been confined five or more times. Of 34 mothers whose exact death records are known, 3 died within a month and 3 more within a year. There were 18 sets of boys, 19 sets of girls, and 31 mixed sets. There were 103 boys to 101 girls. Neonatal mortality was about 50 per cent; infant mortality about 60 per cent. About 25 per cent lived to be adults. At least 8 sets of quadruplets were born between 1742 and 1775. Quintuplets were born in Lake George (town) in 1808.—*Author's abstract.*

13. Infectious Diseases, Acute

The Problem of the Diphtheria Carrier. *E. H. R. Harris, London, England.* Practitioner 159:446-51, December 1947.

Diphtheria carriers and patients with diphtheria remain constant threats to the nonimmune population. The true carrier state may be transient, recurrent or very persistent. The tonsils, nasal mucosa, postnasal space, gingival grooves or middle ear may harbor the organism, as may also the adenoids, nasal polyps and other nasopharyngeal abnormalities. Streptococcic rhinitis may be complicated by unrecognized diphtheria, which should be suspected in the presence of blood-tinged nasal discharge, excoriation of the nares and toxicity. Atypical forms with little or no toxemia may occur in subjects with waning immunity. Bacteriologic culture is necessary for diagnosis. Convalescent and contact carriers may be successfully treated with intramuscular penicillin, 1,000,000 units daily in divided doses for three days. Isolation must continue until three or more consecutive nose and throat cultures are negative over a period of five or more days. Contacts should be passively and actively immunized. Those not previously immunized are given 1,000 units of antitoxin at once, to be repeated later. Alum precipitated toxoid is administered to unimmunized younger children and toxin-antitoxin to all older children and im-

munized younger children. Frank infections are treated by appropriate doses of antitoxin; large doses of penicillin will shorten the course of the disease and may prevent the carrier state. 11 references.—*A. M. Bongiovanni.*

(*The problem of carriers is a complex one. Persons known to harbor virulent diphtheria bacilli should, of course, be isolated and treated. However, they constitute only a fraction of the total number in the community. Attempts to recognize and treat all carriers are impractical. Immunization of population groups still appears to be the best way to control diphtheria.*—ED.)

Infectious Diarrhea of the Newborn. Report of an Epidemic. *Joseph A. Ritter, Rose R. O'Connell and Edward Lucente, Philadelphia General Hospital, Philadelphia Pa.* Pennsylvania M. J. 51:285-89, December 1947.

Fifty-five infants were exposed to infectious diarrhea in the nurseries of a large city general hospital. Forty-four were infected and 2 died. For the full-term infants the morbidity was 71.7 and the mortality rate 1.9 per cent; for the premature infants the rates were 100 and 16.6 per cent, respectively. The cause of the diarrhea was not found. No prodromal symptoms were evident. Diarrhea was always the first manifestation. Acidosis and dehydration were generally encountered. Active treatment was concerned mainly with the maintenance of fluid and electrolyte balance. A home delivery service functioned with remarkable success during the epidemic. Extension of the practice might prove valuable in reducing the frequency of epidemic infectious diarrhea. Rooming-in of infants is another precautionary measure to be considered. 14 references. 1 table.

Therapeutic Results with the Use of Carob Flour in Enterocolitis of Infancy (*Risultati terapeutics della dieta di carrube nelli enterocolite del lattante*). *Alvaro Masi, University of Florence, Florence, Italy.* Riv. clin. pediat. 46:26-32, January 1948.

Flour made from the carob bean has antidiarrheal properties attributed to its absorptive power and its composition of high carbohydrate, low protein and no fat. Preliminary hydration with a rice gruel preparation for six to twelve hours, followed by a 5 per cent suspension of carob flour in water (50 to 100 cc. per kilogram of body weight) was used for 20 infants with acute gastroenteritis. Within twelve hours the stools were fewer and contained no mucus. After twenty-four hours skimmed milk and other additions to the diet were well tolerated. The carob preparation was slowly decreased in quantity over several days. In 5 infants and children with chronic gastrointestinal disturbances there was improvement on a prolonged regimen of carob flour and early dietary additions were possible without ill effects. 11 references. 2 graphs.—*A. M. Bongiovanni.*

(Nestlé's "Arobon" was the carob preparation used above. It represents 2.5 calories per gram, has a pleasant flavor and is well tolerated. The precise clinical diseases treated are not clear although it appears that the celiac syndrome is included in the chronic group.—ED.)

The Etiology of Ekiri, A Highly Fatal Disease of Japanese Children. *Katharine Dodd, G. John Buddingh and Samuel Rapoport, Cincinnati, O.* Pediatrics 3:9-19, January 1949.

Ekiri is a highly fatal disease of Japanese children in the age group 2 to 6 years which is prevalent in the summer season. It is characterized chiefly by convulsions, high fever, diarrhea and vomiting. The course of the disease is short with death occurring within four to forty-eight hours of onset. The disease had heretofore been studied only by Japanese workers who disagreed widely concerning its etiology. Although the incidence of bacillary dysentery is extremely high in Japan and dysentery bacilli could be cultured in about half of the cases of Ekiri, its clinical picture appeared at variance with that of dysentery.

A study carried out in the summer of 1947 under the auspices of the Japanese National Institute of Health and the Public Health and Welfare Section of SCAF (Supreme Command of the Allied Forces) showed that in the clinical picture symptoms of tetany were in the foreground. Rigidity of the musculature with stiff face and carpopedal spasms, twitching and convulsions and involvement of the autonomic nervous system were among the most frequent signs. The triad of high fever, hyperventilation and convulsions dominated the disease picture in the fatal cases. Cases diagnosed as dysentery in the same age group also showed tetanic manifestations and appeared to differ only in degree from those of Ekiri. The effects of calcium therapy were often dramatic and appeared to support the assumption of the importance of tetany. The bacteriologic studies yielded dysentery bacilli in 90 per cent of the cases studied. In over 40 per cent the Sonne strain was the pathogen, in 30 per cent the Flexner and in 30 per cent ambigua. Postmortem examinations showed the dysentery to be mild in the majority of cases. Edema of the brain was the main additional pathologic finding.

The chemical disturbance in cases of Ekiri was characterized by low serum levels of calcium, a decrease of CO_2 content and tension of the blood, and high levels of nonprotein nitrogen. The low calcium levels appeared compatible with the clinical signs of tetany. The decreased CO_2 tension and the presence of normal *p*H values was evidence of the extreme degree of hyperventilation that was observed clinically. The elevation of the nonprotein nitrogen appeared explicable by the great losses of water caused by high fever and hyperventilation, added to losses of body fluid through vomitus and diarrhea. An inquiry into possible nutritional causes of the tendency to

hypocalcemia yielded the information that the Japanese diet is low in calcium, the daily intake of adults being less than 0.3 Gm. and high in phosphorus, so that the calcium to phosphorus ratio is 1:7. The average milk consumption is extremely low, about 1.2 cc. per day for the city population. Japanese infants are breast fed for the most part and are weaned at 1 to 2 years of age. The diet of children does not differ in its composition from that of adults so that calcium consumption of children 2 to 6 years of age is about 0.45 Gm. per day. Rickets is uncommon. An orienting study was carried out on 29 Japanese children 2 to 6 years of age. Mild signs of tetany were found in a considerable proportion of the children; 5 showed serum calcium levels below 9 mg. per 100 cc. The phosphorus levels of the whole group tended to be higher than those of control American children. The serum alkaline phosphatase was considerably elevated, with 12 of the children showing values in excess of 10 Bodansky units. Roentgenographic examinations of the bones gave no evidence of rickets but suggested decreased mineralization.—*Author's abstract.*

Alimentary Toxicosis. *Samuel Karelitz, Mount Sinai Hospital, New York, N. Y.* Rev. chilena de pediat. 18:911-22, December 1947.

Alimentary toxicosis is a symptom complex in infants and young children resulting from diarrhea, and manifested by dehydration, acidosis and peripheral circulatory collapse when severe. With reduced blood volume there is reduced tissue oxidation affecting the whole body and causing dysfunction of the gastrointestinal tract, liver, kidneys, endocrine and exocrine glands. The syndrome may be especially severe in epidemic diarrhea of the newborn. A mortality of 5.4 per cent in the treatment of 125 cases at the Mount Sinai Hospital of New York between 1944 and 1947 is reported. This is compared to a mortality of 65 per cent in 181 cases prior to the introduction of systematic therapy with continuous intravenous fluids (1920 to 1929) and a mortality of 14 per cent among 214 cases immediately thereafter (1930 to 1941). The combination of therapeutic measures has brought about these results but such uncontrolled factors as altered virulence of infection in the newborn may have been an influence. A system of therapy requiring a minimum of laboratory procedures is outlined:

First day:—(1) Nothing by mouth for twelve hours. (2) Ringer-lactate solution with 5 per cent glucose intravenously, 35 cc. per kilogram of body weight in the first thirty to sixty minutes, thereafter 150 cc. per kilogram per day. (3) Whole blood (20 cc. per kilogram) if hemoglobin level is below 11 Gm.; if higher, plasma alone in volumes of 25 to 30 cc. per kilogram. Repeat as indicated. (4) Supplementary M/6 sodium lactate solution to increase blood carbon dioxide combining power to 55 volumes per cent. Thereafter, substitute ½ normal saline containing 5 per cent glucose. Darrow's potassium solution may be used if diuresis has been established. (5) After twelve hours start water by mouth, 5 to 10 cc. every two hours.

Second day and thereafter: (1) Continue intravenous fluids until two-thirds daily quota is taken orally. (2) Increase oral water daily by 5 to 10 cc. every two hours. (3) After thirty-six hours (not sooner) if diarrhea is improved, start a milk formula representing 10 calories per kilogram of body weight divided into twelve daily feedings. (4) Increase formula daily by 10 calories per kilogram up to 40 to 50 calories, more slowly thereafter if not tolerated. Reduce number of feedings to six or eight daily and increase water intake. (5) Discontinue parenteral fluids when oral intake is adequate. (6) Penicillin or sulfadiazine may be given if indicated. Ascorbic acid and thiamine should be supplied parenterally from the first day. Intravenous amino acids are used if starvation is prolonged.

Frequent serum protein, hematocrit, hemoglobin and red cell determinations should be made with other chemical tests as needed. If symptoms recur, the entire program is repeated. 10 references.—*A. M. Bongiovanni.*

(*The low mortality reported by Karelitz has been duplicated in a number of places. It is likely that better understanding of the fundamental physiologic disturbances of water and electrolyte loss will enable pediatricians to simplify the treatment of alimentary toxicosis so that the elaborate set-ups of the research laboratory are unnecessary for effective treatment. It is now clear that in addition to deficit of water, the body loses chloride, sodium and potassium. The losses of sodium and chloride are approximately equivalent in most cases. Hence the acidosis is dependent on relatively greater loss of sodium than chloride from the extracellular fluids, with the relatively greater loss of sodium from extracellular fluids explained by transfer of sodium to the cells where it partially replaces the deficit of potassium. The calculation of a dose of sodium bicarbonate or sodium lactate which will raise serum bicarbonate to normal is, therefore, not based on a true relative deficit in the body as a whole* (*J. Clin. Investigation* 27:198, 1948).

While there may be some advantages in rapidly overcoming acidosis, administration of large doses of sodium bicarbonate run the risk of producing alkalosis and aggravating the symptoms of potassium deficit. Potassium salt in conjunction with small doses of sodium bicarbonate and sodium chloride aids recovery from acidosis and overcomes the tendency to development of low serum potassium and alkalosis. Rapoport and others (*Am. J. Dis. Child.* 73:391, 1947) *point out that there are difficulties accompanying the readjustments during recovery from acidosis. Low calcium tetany which responds to calcium therapy is a frequent complication. Tetany during and following diarrhea is apparently a more frequent complication in Japan and, to a less extent, in Cincinnati than in many other places.* [*See preceding abstracts on Ekiri*].—ED.)

The Therapeutic Use of Potassium

Editorial Comment

[*The addition of potassium chloride to the usual replacement therapy for diarrhea was first systematically introduced in September* 1945. *The solution used contained* 120 *mEq. of sodium,* 36 *mEq. of potassium* 104 *mEq. of chloride and* 52 *cc. of molar sodium lactate per liter* (*i.e.,* 4 *Gm. NaCl;* 2.7 *Gm. KCl;* 52 *cc. of molar sodium lactate*). *Four and four-tenths grams of sodium bicarbonate may be substituted for the sodium lactate. The solution contains sodium and chloride in the ratio of interstitial fluid but at a concentration about* 15 *per cent lower. The potassium is about ten times as concentrated as that of serum. The fluid supplies sodium and chloride in the correct ratio for restoring the extracellular volume and concentration of extracellular fluids together with a safe quantity of potassium. The solution may be injected subcutaneously without dilution or intravenously after dilution with two or more parts glucose in water.*

The retentions during recovery indicate that the average deficits in severe diarrhea are 100 *Gm. of water,* 9.2 *mEq. of chloride,* 9.5 *mEq. of sodium and* 10 *mEq. of potassium per kilogram. These findings indicate that the acidosis is dependent on deficit of potassium rather than greater relative deficit of sodium than chloride in the body as a whole. Actually serum analyses show that there is a relative deficit of sodium in extracellular fluids but this is explained by transfer of sodium to intracellular fluids owing to the deficit of potassium. In practice the solution restores serum bicarbonate to normal in twenty-four to forty-eight hours without additional sodium bicarbonate even in the most severe cases. Although larger doses of sodium bicarbonate* (*or lactate*) *will raise the serum bicarbonate to normal more rapidly, this practice runs the risk of producing alkalosis and may aggravate the tendency to develop low concentration of calcium in serum.*

Darrow and associates have used the solution almost exclusively by hypodermoclysis with a slow drip giving the full dose for twenty-four hours over a period of four or more hours. During the first twenty-four hours of treatment, 80 *cc. per kilogram is sufficient for replacement of the deficit of water and electrolyte. Thereafter further losses of electrolyte may be replaced by* 25 *to* 50 *cc. of this solution per kilogram per day. It is essential to give the electrolyte solution together with sufficient water containing no electrolyte to provide for losses of water in the urine, stools, lungs and skin. Stool water may be as much as* 80 *cc. per kilogram per day and sweat in hot weather may be* 100 *cc. per kilogram per day. While electrolyte is lost in stool and sweat, the concentrations are usually lower than those of serum. Adequate renal function requires* 25 *to* 50 *cc. of urine per kilogram per day. In addition to the potassium containing fluids, the water requirement during the first twenty-four hours of treatment is* 125 *to* 200 *cc. per kilogram. After the first day the total fluid requirement*

can usually be met by 150 cc. per kilogram per day including the solution containing electrolyte which should not be more than one-third of the total.

If the potassium containing fluid is to be given intravenously, it should be diluted with sufficient 5 or 10 per cent glucose in water to cover the requirement for twenty-four hours. This should be given by slow drip over this period. This means that one part of the above potassium containing fluid is diluted with two or three parts of 5 or 10 per cent glucose in water. The solution so diluted is essentially the same as Butler's except that it contains no phosphate. Butler's solution contains about 30 mEq. of sodium, 22 mEq. of chloride, 20 mEq. of lactate, 15 mEq. of potassium and 5 mM of phosphate per liter of 5 or 10 per cent glucose. This solution is suitable for intravenous but not subcutaneous injection. Adequate amounts of electrolyte are given if the volume is sufficient to meet the water requirement. The solution provides slightly more potassium in relation to sodium and chloride than Darrow's solution but the differences are probably not clinically significant. The addition of phosphate is indicated in diabetic coma and is probably advantageous in diarrhea.

Actually the majority of cases of infantile diarrhea do not require parenteral therapy and after twelve to twenty-four hours of parenteral administration of fluids, even the severe cases may be given a suitable fluid by mouth. Darrow and associates have diluted their potassium containing fluid with two parts of 5 per cent glucose in water and offered 150 cc. or slightly more per kilogram per day by mouth. The efficacy of the carrot soup therapy used so widely in Europe is probably dependent on the fact that this mixture contains about 40 mEq. of potassium per liter together with suitable amounts of sodium, chloride and phosphate.

There has been considerable apprehension of the dangers of potassium intoxication. On admission the concentration of potassium in serum is likely to be slightly higher despite the deficit of potassium in the body as a whole. Intravenous injection of physiologic saline and glucose in water in cases with severe dehydration is a safeguard since this procedure improves the circulation and restores renal function. Actually the subcutaneous injection of potassium containing fluids may be started slowly as soon as the intravenous infusion is established. Using the recommendations of Darrow and associates potassium intoxication has not been encountered in over 250 cases treated in New Haven and Texas.—D.C.D.]

Encephalitis. Isolation and Identification of Virus from Body Fluids in Human Subjects. *Russell J. Blattner and Florence M. Hoys, Houston, Tex. and St. Louis, Mo.* Paper read at Joint Meeting of the American Pediatric Society and the Canadian Society for the Study of Disease of Children. Quebec City, Que., May 26, 1948.

From 1943 through 1947, 81 cases of encephalitis were studied for the presence of virus in the peripheral blood. Blood was heparinized and promptly inoculated into white Swiss mice or on the chorioallantoic membrane of the fertile egg. A virus was isolated in 1 of these cases, a 9 year old boy seen in July 1945 with signs and symptoms suggesting encephalitis. From his blood stream virus of St. Louis encephalitis was isolated. During clinical recovery this patient developed increasing antibody titer to the newly isolated virus and to a known strain of St. Louis encephalitis virus (Hubbard strain). Simultaneous inoculation of spinal fluid failed to reveal the presence of virus. From 1940 to 1947, 304 spinal fluids were inoculated on the chorioallantoic membrane of the fertile egg and into white Swiss mice. A virus was isolated in 7 instances: five strains of lymphocytic choriomeningitis virus, one of vaccinia virus and one of herpes simplex. In the last instance herpes simplex was isolated also from brain tissue taken at autopsy and pathologic studies of the brain revealed that the virus had entered the central nervous system through the olfactory nerve. Mouse protection tests were done on serums of 152 patients; 17 of these showed increasing antibody titer to St. Louis virus.

Gamma-Globulin in the Prevention and Attenuation of Measles. *Report of a Subcommittee to the Blood Transfusion Research Committee of the Medical Research Council.* Lancet 2:41-44, July 10, 1948.

Employing supplies of gamma globulin fraction from the United States, British investigators have evaluated this material in the prevention and attenuation of measles in children. In no instance were there local or general reactions to gamma globulin. Of 136 contacts who received convalescent serum, 70.6 per cent were protected; of 139 contacts who received gamma globulin, 82.7 per cent were protected. On the basis of smallest effective dose, gamma globulin was twice as potent as convalescent measles serum. For prevention, 0.1 cc. per pound of body weight was given intramuscularly as soon after exposure as possible. Eliminating the results with one defective batch of gamma globulin, prevention or attenuation of measles was effected in 94 out of 95 contacts. Susceptible contacts were given 0.1 cc. per pound of body weight of two year old gamma globulin. The age of the product did not reduce its effectiveness.—*B. J. Shuman.*

(*The question of how long gamma globulin may be kept without appreciable deterioration of its antibody content still needs much further study. The antibodies appear to diminish much more slowly than originally thought.*—ED.)

Meningitis in Childhood. *Nelles Silverthorne, Hospital for Sick Children, Toronto, Ont., Canada.* Canad. M. A. J. 58:255-58, March 1948.

From 1919 until 1946, 1,325 children with meningitis were observed at the Hospital for Sick Children in Toronto. The types of meningitis, incidence, treatment and results are tabulated.

	TREATMENT	No. of CASES	No. RECOVERED	FATALITY %
I.	Tuberculous			
	a. All types of treatment (some with streptomycin)	413	0	100
II.	Meningococcic	317		
	a. Serum	122	82	33
	b. Serum and sulfadiazine	56	50	11
	c. Sulfadiazine	123	106	14
	d. No time to treat	13	0	100
	e. No treatment	3	3	0
III.	Pneumococcic	195		
	a. General	121	0	100
	b. Sulfadiazine	49	7	86
	c. Sulfadiazine and penicillin	19	13	32
	d. No time to treat	6	0	100
IV.	Influenzal	191		
	a. General	71	1	98
	b. Serum (Fothergill)	50	11	78
	c. Serum and sulfadiazine	20	5	75
	d. Serum (Alexander) and sulfadiazine	25	14	44
	e. Sulfadiazine	17	8	53
	f. Streptomycin (with or without sulfadiazine)	8	6	25
V.	Streptococcic	183		
	a. General	136	2	98
	b. Sulfadiazine a/o penicillin	47	26	45
VI.	Staphylococcic	26		
	a. General	23	1	
	b. Sulfadiazine a/o penicillin	3	1	

All dehydrated and critically ill patients received continuous intravenous Ringer's lactate or glucose and saline solutions. Lumbar punctures were performed daily in pneumomoccic, influenzal, streptococcic and staphylococcic meningitis. Punctures were continued for a minimum of five days and discontinued when the spinal fluid was sterile. Penicillin was instilled with each lumbar puncture (except streptomycin for influenzal meningitis). Sulfadiazine and penicillin were given intramuscularly or intravenously until the patient's clinical condition was good, the spinal fluid cell count approached normal, and the spinal fluid cultures were sterile. 2 references. 6 tables. 2 charts.—*B. J. Shuman.*

The Effect of Influenzal Meningitis on the Nervous System. *Raymond D. Adams and Charles S. Kubik, Harvard Medical School, Boston City Hospital and Massachusetts General Hospital, Boston, Mass.* New York State J. Med. 47:2676-82, Dec. 15, 1947.

Fourteen fatal cases of influenzal meningitis in children dying within eighteen hours to seventy-six days are reviewed. During the first two weeks of disease the cerebral parenchyma is usually unaf-

fected but subarachnoid exudate is abundant over the base and dorsum of the cord. Blockage of the cerebrospinal canal may occur. After the second week the cerebral and cerebellar cortices, hypothalamus and optic nerves reveal widespread glial alterations. Necrosis of the cerebral cortex may be evident. Perivascular infiltration of subependymal veins, thrombophlebitis of subarachnoid vessels and hydrocephalus also result. Adhesive arachnoiditis implicating cranial nerves or spinal cord has also been reported but was not seen in this series. Occasionally the severity of the lesions observed was not proportional to the duration of the illness. Prompt diagnosis and treatment of influenzal meningitis should prevent the occurrence of permanent cerebral damage or death. Cranial nerve palsies, hemiplegia, convulsive seizures and hydrocephalus may otherwise occur as sequelae. 1 reference. —*A. M. Bongiovanni.*

Intrathecal Therapy Not Required for H. Influenza Meningitis. A Report of 28 Cases. *Archibald L. Hoyne and Rowine Hayes Brown, Chicago, Ill.* J. A. M. A. 136:597-601, Feb. 28, 1948.

A discussion is presented on the intrathecal use of streptomycin and other therapeutic agents for meningitis. One of the authors abandoned the use of intrathecal therapy for meningococcic meningitis in 1934 and soon found that this could be done with all forms of bacterial meningitis.

Thirty consecutive cases of H. influenza meningitis are reported with only 2 deaths (fatality rate of 6.6 per cent). One of the 2 deaths occurred thirteen hours after admission to the hospital. Twenty of the patients were treated with streptomycin. Of these the first 7 received the antibiotic intraspinally; for the remaining 13 only the intramuscular route was used. Some of the other 10 were given type B antiinfluenzal serum intravenously. All patients were given some sulfonamide. When streptomycin was used, the customary dosage was 0.1 Gm. every three hours. The average number of days of streptomycin treatment was 5.9 at Municipal Hospital and 17.2 at County Hospital. The latter figure is accounted for by the fact that 1 patient was treated for twenty-seven days before recovery. The average total dose of streptomycin for recovered patients at Municipal Hospital was 4.6 Gm., whereas the average for Cook County Hospital was 20.9 Gm. In nearly every instance the initial dose of the sulfonamide (usually sulfadiazine) was given intravenously, and this drug was continued, as a rule, for approximately three weeks. The average number of lumbar punctures for the recovered patients was 2. Seventeen (85 per cent) of 20 patients had positive smears or cultures from the spinal fluid. In every instance the causative organism was type B Hemophilus influenzae. Of the 30 patients, 23 of the 28 who recovered received no intrathecal therapy.

From their experience the authors believe that: (1) without in-

trathecal treatment recovery is more prompt and complications are fewer; (2) the primary purpose of a lumbar puncture is to establish a diagnosis; (3) frequent intrathecal taps do not benefit the patients; (4) intrathecal therapy is contraindicated in type B Hemophilus influenzae meningitis. Details of 28 cases are presented in a table. 18 references. 1 table.—*Author's abstract.*

Salmonella Meningitis. Report of Three Cases and Review of One Hundred and Forty-Four cases from the Literature. *Lowell L. Henderson, Urbana, Ill.* Am. J. Dis. Child. 75:351-75, March 1948.

A 3½ month child with meningitis due to Salmonella Newport made a complete recovery after a stormy three months' illness. Sulfadiazine and frequent blood transfusions were used in treatment. A newborn infant, thought to have pneumonia, was treated with penicillin but died on the tenth day. Autopsy revealed a purulent meningitis due to S. typhimurium. A third case found in the hospital records, was a child aged 13 months who died after one month of illness, the autopsy disclosing meningitis due to S. Panama. A review of the literature yielded reports of 144 additional cases of meningitis due to Salmonella organisms. Sixteen types of Salmonella were involved, the most frequent being S. enteritidis, S. Havana, S. Panama, S. typhimurium and S. choleraesuis. Distribution was worldwide but the majority of cases came from temperate zones.

The disease appears to result from the meningeal localization of a septicemia. Newborn infants are particularly susceptible. Clinical features of the illness at that age include an epidemic tendency with diarrhea and rapidly fatal course, in contrast to sporadicity, common absence of diarrhea and better prognosis in older infants and adults. At all ages the course is febrile with leukocytosis and the spinal fluid shows an increase in cells with early predominance of neutrophils. The organism may often be seen on direct smear and is identified by cultural and serologic characteristics. Autopsy reveals a purulent meningitis with a tendency for basilar distribution of the exudate.

Of 19 cases treated with a sulfonamide, 10 recovered, whereas of 128 cases not so treated, only 8, or 6 per cent recovered. Penicillin is ineffective. Streptomycin deserves further investigation. Blood transfusion appears to be a valuable aid. Of 49 patients less than 1 month old, only 1 recovered, whereas 17 of 80 over 1 month of age lived. Of 45 cases due to S. enteritidis and its varieties, all died, while the majority of recoveries were in cases due to S. paratyphi A, S. paratyphi B and S. Panama. Any of the sequelae typical of purulent meningitis may occur. 81 references. 3 tables.—*Author's abstract.*

(*Meningitis is easily missed in young infants, especially newborns. Stiff neck, fever and leukocytosis may all be absent. The fontanel will usually be somewhat full or tense, though in very young infants who are dehydrated from diarrhea or vomiting, meningitis may exist with-*

out any of the usual physical signs and can only be eliminated from consideration by means of a spinal puncture. The spinal fluid should be examined even on slight suspicion since early diagnosis is essential for successful treatment, and identification of the causative organism is imperative. Empirical treatment with multiple antibiotics and sulfonamides will often be necessary until the organism has grown out and its sensitivity tested toward the various available therapeutic agents.—ED.)

The Reactivity of Various Human Sera with Mumps Complement Fixation Antigens. *Gertrude Henle, Susanna Harris and Werner Henle, School of Medicine, University of Pennsylvania, Philadelphia, Pa.* J. Exper. Med. 1:133-47, July 1, 1948.

Analysis of various preparations of tissues and fluids derived from chick embryos infected with the agent of mumps revealed that they contained at least two serologically distinct complement fixing antigens. One was closely linked with the virus and found predominantly in the amniotic and allantoic fluids. The other was smaller in size and demonstrable mainly in the infected tissues; i.e., in the amniotic and allantoic membranes. The virus-bound was named the V antigen. The smaller soluble was named the S antigen. Human serums react to a varying extent with S and V preparations. Antibodies to the S antigen appear earlier in the disease and, as a rule, reach high levels before antibodies against the V antigen commence to rise. In early convalescence, both antibodies reach high levels. Later on, antibodies against S decrease usually at a faster rate than those against V; after a period of several years, only anti-V may be left. These antigens have permitted the early diagnosis of manifestations of mumps in the absence of parotitis, such as meningoencephalitis, since the finding of high levels of anti-S and of low titers of, or no, anti-V is considered diagnostically significant for the first few days of illness. For the determination of resistance the use of V antigen appears more useful. Following vaccination or skin testing, antibodies against both antigens may develop; those against V increase more regularly and to higher titers than those against S. 17 references. 7 tables.

(*The use of these antigens represents an important clinical advance in the recognition of mumps, especially the meningoencephalitic form when parotitis is absent.*—ED.)

Tonsillectomy-Poliomyelitis Survey—1947. *Daniel S. Cunning, Manhattan Eye, Ear and Throat Hospital, New York, N. Y.* Laryngoscope 58:503-13, June 1948.

A survey is described of 4,331 cases of poliomyelitis in 25 states for the year 1947 as reported on questionnaires submitted by members of the American Laryngological, Rhinological and Otological Society.

Only 0.5 per cent of the reported cases were preceded by tonsillectomy, as compared with 1.9 per cent which were preceded by other operations. Of 5,439 tonsillectomy cases performed in 15 different states during the year 1947, only 2 patients became ill with poliomyelitis within two months thereafter. The danger of poliomyelitis as a sequel to adenotonsillectomy is held to be exaggerated. 8 tables.

(*Repercussions of this survey are beginning to be widely heard, and among otolaryngologists at least, opinion is already showing a distinct trend to disbelief in a causal relationship between adenotonsillectomy and poliomyelitis. We believe that this is a highly dangerous reversal of opinion which is based on faulty statistical sampling and a neglect of well-substantiated positive evidence for the existence of such a relationship. First noted by Ayer in* 1928, *the occurrence of poliomyelitis within the known incubation period following operation has been attested by many subsequent reports, all of which have also showed a very high percentage of bulbar involvement in such cases. Aycock's compilation, dated* 1942, *records* 170 *cases, of which* 121 *or* 71 *per cent were bulbar. It was about at this time or perhaps somewhat earlier that the danger became generally recognized and the operation generally avoided in the presence of epidemics. It can hardly be disputed that in the last six years or more relatively few tonsillectomies have been done in this country in communities where poliomyelitis has reached epidemic proportions; that is, when virus is presumably widespread in a given locality. For this reason sampling from* 1947 *material, such as was used in the Cunning survey, must be not only faulty but in all probability seriously misleading. Johnson's excellent study of tonsillectomies before and during the* 1943 *epidemic in Utah brings out clearly the various points at issue: the low poliomyelitis-tonsillectomy ratio* (0.7:1,000) *before the epidemic began, the declining number of tonsillectomies during the epidemic, the high poliomyelitis-tonsillectomy ratio* (25.5:1,000) *at the height of the epidemic, the high percentage* (43 *per cent*) *of all the bulbar cases that followed operation, and the fact that the incidence of poliomyelitis was* 2.6 *times greater and the incidence of bulbar involvement* 16 *times greater in recently tonsillectomized children than in the general child population.*

It is urgently hoped that the Cunning survey will not lead to the resumption of adenotonsillectomy during epidemics or threatened epidemics, and that pediatricians will lend their influence to the continuation of the presently well-established policy of avoiding the procedure at such times.—ED.)

Report of an Outbreak of Q Fever at the National Institute of Health. I. Clinical Features. *Charles G. Spiknall, Robert J. Huebner, James A. Finger and William P. Blocker, National Institute of Health, Bethesda, Md. and the U. S. Public Health Service, Washington, D. C.* Ann. Int. Med. 27:28-40, July 1947.

Forty-five of 47 cases of Q fever occurring during a laboratory outbreak at the National Institute of Health, Bethesda, Md., were studied from a clinical standpoint. The severity of the illness in these patients varied markedly. Six of the patients continued working because of the mildness of their symptoms or because they disregarded more severe symptoms. Evidence of pneumonitis could be demonstrated in only 13 patients. Headache, generalized aching, cough, chest pain and fever were the most common symptoms and signs. Gastrointestinal symptoms were not uncommon. Routine laboratory studies were not particularly helpful in diagnosis except for the white blood cell count which was generally normal. The diagnosis was confirmed in all cases by the complement fixation test. Antigens were prepared from the American and Italian strains of Rickettsia burneti. The Italian antigen was found to be the more sensitive and accurate. Penicillin, sulfadiazine and transfusions of immune blood were found to have no influence on the course of the disease. 20 references. 1 table. 8 figures.

Q Fever Studies in Southern California. I. Recovery of Rickettsia Burneti from Raw Milk. *R. J. Huebner, W. L. Jellison, M. D. Beck, R. R. Parker and C. C. Shepard, U. S. Public Health Service and the California State Department of Public Health.* Pub. Health Rep. 63: 214-22, Feb. 13, 1948.

Observations made during 1947 indicated that Q fever is endemic in Southern California. Proximity to dairies by reason of occupation or residence was a common factor in more than 50 per cent of the cases. Except for dairy workers, it was noted that the infected persons rarely used milk from nearby dairies. It was also found in fairly extensive serologic surveys that 10 to 20 per cent of the dairy cows in the Los Angeles area possessed serum antibodies for Q fever. This paper reports the recovery of R. burneti, the causative agent of Q fever, from the raw milk of four widely separated dairies in Los Angeles County. A total of 50 milk specimens was injected into guinea pigs and 40 gave evidence of infection with R. burneti. There was failure to recover R. burneti from whole blood, blood clots, urine and feces of a limited number of cows shedding R. burneti in their milk, and there was no demonstrable illness in the infected animals. The relative ease with which the parasite was recovered from milk of dairies in Los Angeles City and County suggests a high degree of availability of this pathogenic agent to the human and animal populations of the area, since much of the milk is handled and sold without pasteurization. But whether or not milk represents an effective source of in-

fection to man cannot be determined by the data presented in this report. The outbreaks in packing houses, stockyards and laboratories have not pointed to the drinking of infected milk as a cause of the outbreaks. 5 references. 2 tables.

Intestinal Perforation in Typhoid Fever in Children. *Chen-Nan Liu, The Shanghai Public Hospital for Children, Shanghai, China.* Nat. M. J. China 34:77-84, February 1948.

Among 236 cases of typhoid fever in children intestinal perforation occurred in 13, aged 3 to 9 years. In 6 cases perforation was found in the last foot of ileum, one being complicated with appendiceal abcess which dated from the first week of the disease. Six perforations occurred in the third week and one during relapse. 13 references. 2 tables.—*C. L. Kao.*

Encephalomyelitis After Vaccination. *E. T. Conybeare, Ministry of Health, Great Britain.* Month. Bull. Min. Health & Emerg. Pub. Health Lab. Serv. 7:72-79, April 1948.

This is a review of 222 cases of encephalomyelitis after vaccination reported to the Ministry of Health of Great Britain during the twenty years, 1927 to 1946. Of these 110 were fatal. Nearly half the total cases and the same proportion of the total deaths were in the school age group (5 to 15 years). Three-quarters of these school age cases were reported in the three years 1927 to 1929. Just over a third of the total cases were adolescents or adults and of these approximately half occurred during the six years 1939 to 1944. Less than 50 per cent of the cases at these ages were fatal. Twenty-seven cases among infants under 2 years of age form just over 10 per cent of the total (21 of these were fatal). In 170 of the 222 cases the acute disease of the central nervous system followed a primary vaccination. In 36 cases the vaccinal state at the time of the vaccination was unknown. In 16 cases (6 of whom were fatal) the acute disease of the central nervous system followed a revaccination. In 10 of these, there was evidence that a primary vaccination done in infancy had been successful. The interval between the infancy vaccination and revaccination was not less than eleven years in any of these 10 cases. In 5 it was more than twenty years. In 184 cases the lymph used for the vaccination or revaccination which was followed by encephalomyelitis was of government manufacture. In the 38 remaining cases, 20 of whom were fatal, the lymph used was obtained from three different manufacturers. There did not appear to be any association of groups of cases with particular batches of lymph derived from any of these four sources. There was no evidence that the method of vaccination (including variation in the number of skin areas) or the extent of the local reaction either determined the subsequent occurrence of encephalomyelitis or influenced its severity. There was no evidence for

a seasonal or geographic incidence, or for association with diseases other than smallpox.

A conservative estimate would place the total number of infant vaccinations done during the whole of the twenty years at over 4 million. During this period 21 infants deaths were attributed to postvaccinal encephalomyelitis. It appears, therefore, that the death rate from this complication of primary vaccination of infants is of the order of 5 per million. In none of the twenty years were more than 3 infant deaths certified as due to postvaccinal encephalomyelitis. In ten of the twenty years no infant deaths were certified from this cause. Data from Holland appear to show that in that country encephalomyelitis has been ten to thirty times more frequent after primary vaccination at school age than after infant vaccination. For England and Wales no precise data are available regarding the numbers of primary vaccinations done in school children and therefore incidence rates could not be calculated. In infants under 2 years of age the length of the interval between vaccination and onset of disease of the central nervous system was commonly ten days or less; in older children and adults it was usually between eleven and fourteen days. It appeared possible on clinical grounds, admittedly arbitrary, to divide the cases into at least four groups: (1) myelitis without encephalitis; (2) encephalitis with myelitis, (3) encephalitis; (4) meningeal reaction. The myelitic form was less common in infants than in older children and adults. Spinal cases constituted only about 10 per cent of the total reported cases of postvaccinial nervous disease, and, together with the similar small proportion of cases apparently due to meningeal inflammation, had a substantially better prognosis than the cases forming some 75 per cent of the total, in which the dominant clinical feature was encephalitis. 4 references. 5 tables.

14. *Infectious Diseases, Chronic*

Experience of Rheumatic Patients Who Served in the Armed Forces 1942-1946. *May G. Wilson, J. W. Payson and Rose Lubschez.* Am. J. Pub. Health 38:398-402, March 1948.

Of 268 rheumatic patients registered in the Children's Cardiac Clinic of New York Hospital who were of military age during World War II, 167 were accepted by the armed services. Most of these had denied their past history and made every effort to pass the physical examination. Considerable physical stress and various climatic exposures were experienced by most of these men. Seventy-eight per cent were sent overseas and 47 per cent were in active combat. The incidence of rheumatic fever (major recurrent attack) among 141 of these who were followed proved to be less than 2 per cent for 386 patient years. The incidence of recurrence among 101 rheumatic patients re-

jected for service was 7 per cent for 400 patient-years. It would appear, therefore, that men with rheumatic heart disease were able to tolerate strenuous activity in basic training and under combat conditions, and that the risk for a recurrent attack of rheumatic fever is no greater in the services than in civilian pursuits. The authors state, further, that if certain assumptions made are valid, and within the limitations of the data available for analysis, it appears that the majority of the attacks of rheumatic fever reported in the services were recurrences.

The Familial Incidence of Rheumatic Fever. II. A Statistical Study of the Familial and Personal History of Rheumatic Fever. *G. C. Griffith, F. J. Moore, S. McGinn and R. S. Crosby, University of Southern California, Los Angeles, Calif.* Am. Heart J. 35:444-47, March 1948.

Any inherited susceptibility which increases the risk of developing rheumatic fever should be effective whether the individual remains at home or leaves the family environment. The authors sought, from a study of 4,991 subjects, to learn whether this was true. Excluding 1,082 of these on the basis of inadequate information it was concluded that the tendency of individuals with positive family history to develop rheumatic fever is greater while still in contact with the family but not after separation from them. Consequently there does not seem to be a strong inherited susceptibility in this disease. The occurrence of multiple cases in families might be explained on the basis of common environment or contagion. The authors prefer to look upon the latter as the dominant factor in the development of rheumatic fever. 4 tables.—*R. N. Paul.*

Epidemiological Study of Seven Hundred and Fifty-Seven Cases of Rheumatic Fever. *Robert W. Quinn, New Haven, Conn.* Arch. Int. Med. 80:709-27, December 1947.

Several facts of epidemiologic importance have been derived from a study of 757 patients with rheumatic fever, all of whom were enlisted personnel of the Navy and Marine Corps. Among these are crowding in barracks and the introduction of susceptible recruits into an infected environment. Possibly strenuous duties of training in sectors in which the civilian death rate for rheumatic fever is high plays a role since most of the cases came from training centers and 70 per cent from centers located in five states: Illinois, Maryland, New York, Rhode Island and Virginia. Reliable histories of previous attacks were obtained in 24.5 per cent, suggesting that these individuals were especially susceptible to the disease or factors were present in the new environment which favored reactivation of the rheumatic process. Seventy-four per cent had an upper respiratory infection preceding the onset of rheumatic fever by an average of eighteen days.

There was no proof that these were caused by streptococci but they occurred in the presence of epidemics of hemolytic streptococcic infections. It is of interest that 75 per cent enlisted from the North Central and Middle and South Atlantic States and at least that many came from urban homes. 16 references. 8 tables. 5 figures.—*R. N. Paul.*

Penicillin Therapy of Late Congenital Syphilis. *Ralph V. Platou and John T. Kometani, New Orleans, La.* Pediatrics 1:601-16, May 1948.

One hundred and nine children with congenital syphilis were treated with penicillin at some time between the second and thirteenth year of life. Seventy-two per cent of those followed for more than two months were reported as clinically well with negative serologic reactions or progressively declining titers. Results were significantly better for children treated under 6 years of age than they were for older children and also for those who had normal spinal fluid before treatment. Outcome was significantly worse in those who had received previous treatment of any sort. There were 3 relapses—2 defined serologically and 1 by questionable recurrence of interstitial keratitis. About a quarter of those with latent congenital syphilis have become seronegative. The poorest results ensued for patients with clinical neurosyphilis. For interstitial keratitis results were most gratifying in 2 patients treated within a month of onset.

Though no valid comparisons can be made until more patients have been treated and followed for a longer time, it seems to the authors that penicillin used alone is at least as effective as any other single agent for the treatment of late congenital syphilis. To what extent treatment or time alone contribute to improvement cannot yet be stated. At present the authors advise a total dosage comprising at least 100,000 units commercial penicillin per kilogram of body weight, divided into one hundred equal intramuscular injections and given at two to three hour intervals around the clock for eight or more days. The simplicity, safety and convenience of this treatment plan make it preferable to the more costly, hazardous and time-consuming older methods; furthermore, it effectively curtails the appallingly high delinquency rates formerly prevailing. 15 references. 13 tables.—*J. T. Kometani.*

Studies on the Pathogenesis of the Tuberculin Toxic-Allergic Meningeal Reaction in Children (*Recherches sur la pathogénie de la réaction meningée tuberculotoxico-allergique chez l'enfant*). *D. Mórtiz, University Bolyai de Cluj.* Helv. paediat. acta 2:332-38, Fasc. 4, August 1947.

Toxic-allergic tuberculous meningitis is described in 7 infants from 3 to 7 months of age. Spinal fluid studies in each child showed increased pressure, positive Pandy test, slight increase in protein and

cells, normal sugar and absence of tubercle bacilli, yet symptoms of meningeal irritation were absent. At necropsy, each child had primary pulmonary tuberculosis; all but 1 infant had dissemination. A tuberculoma of the brain was found in 5 children; the 2 others had only edema and hyperemia of the brain and pia mater. It is postulated that this form of meningitis is an allergic phenomenon in which the pia mater of a tuberculin sensitive individual becomes hypersensitive to the toxin of the tubercle bacillus. 19 references. 1 table.—*B. J. Shuman.*

Tuberculin Tests Following Oral Vaccination of Newborn Infants with a Single Dose of 100 Mg. BCG (*Alergia tuberculinica depois da vaccinacção oral do recem-nascido com dose unica, 100 miligramas, de BCG*). *Arlindo de Assis, Instituto Viscondessa de Morais, Rio de Janeiro, Brazil.* Hospital, Rio de Janeiro 33:169-78, 1948.

From Feb. 1 to Dec. 31, 1947, 20,516 newborn infants have been vaccinated on the fourth to the tenth day of life with a single dose of 100 mg. BCG by mouth in the maternity wards and private homes of Rio de Janeiro. This practice has been as well tolerated as the former method of giving three doses of 30 mg. on alternate days to every infant, and from the viewpoint of mass vaccination of newborn infants proved more practical. The BCG vaccine used in Rio was prepared with fourteen day old pellicle growths and the diluent employed was Sauton diluted to one-fourth strength carefully adjusted to *p*H 7.2. The concentration of BCG in the vaccine was 20 mg. per 1 cc.; the vaccine had been stored at 4 C. for no longer than ten days after its preparation.

For the sake of determining the first appearance of tuberculin reactivity of vaccinated children in nontuberculous households, 2,028 infants have been tested intradermally with 1 mg. and 10 mg. O.T. Reactions were considered positive only if the induration reached over 4 mm. in diameter within forty-eight hours. Of the infants, 1,438 were white and 590 were colored (194 Negroes and 396 mulattoes). Sixty per cent of tuberculin reactors were found between the fourth and the sixth week of life among the vaccinated. Following BCG vaccination at birth the colored infants seemed to become tuberculin positive more readily than the white ones. At the period of eleven to sixteen weeks the average per cent of tuberculin positive infants fluctuated around 90, while at the sixth month of life it dropped to 82.86 per cent. Thus the single dose method of peroral BCG vaccination for the newborn seems to afford an adequate passage of living BCG bacilli through the gastrointestinal barrier. 6 references. 4 tables.

First International B. C. G. Congress. Paris Letter, July 30, 1948. J. A. M. A. 138:228-29, Sept. 18, 1948.

This Congress, held at the Paris Pasteur Institute, was attended by delegates from almost every nation. More than one hundred com-

munications were read before the four sections. The Congress passed unanimously, among others, the following resolutions: "that over ten million vaccinations practiced in the whole world for twenty-five years confirm the absolute innocuity of BCG vaccination in human beings; that BCG vaccination constitutes the most effective means of preventing tuberculosis; that the vaccine BCG strain used in all countries originates from the Paris Pasteur Institute; that the technic confirmed by tests in Paris at the Pasteur Institute insures its vitality; that the Congress recommends the introduction of the vaccine through the skin, the modes of application of which are varied; that the Congress does not exclude the oral administration for practical reasons; that the Congress recommends the revaccination of subjects whose cutaneous sensitivity to tuberculin has disappeared; that the Congress considers urgent as widespread a diffusion as possible of BCG vaccination; that the Congress recommends the development of all other prophylactic measures employed in the fight against tuberculosis".

(*The United Nations International Children's Emergency Fund antituberculosis vaccination program is the largest mass immunization ever undertaken. The program contemplates tuberculin-testing* 40 *to* 50 *million children in Europe and offering vaccination to all found to be uninfected by the tubercle bacillus. A total of* $4,000,000 *has already been allocated by the Children's Fund for the work, and the testing and vaccination of European children will begin very shortly under the joint sponsorship of the UNICEF, the World Health Organization, the Danish Red Cross, and other Scandinavian Red Cross chapters. After completion of the European project, similar programs may be undertaken in Algeria, Tunisia, Morocco and China, as well as Southeast Asia and Latin America. See the August issue of the* QUARTERLY REVIEW OF PEDIATRICS *for a more detailed description of the world-wide program.*—ED.)

Statement on BCG Vaccination of American Trudeau Society. NTA Bulletin 34:31-40, March 1948.

The American Trudeau Society, which is the Medical Section of the National Tuberculosis Association, has made the following observations and recommendations: (I) BCG vaccine, prepared under ideal conditions and administered to tuberculin negative persons by approved technics, can be considered harmless. (II) The degree of protection reported following vaccination is by no means complete nor is the duration of induced relative immunity permanent or predictable. The need for further basic research on the problem of artificial immunization against tuberculosis is recognized and is to be emphasized. Studies should be directed: (a) toward improvement of the immunizing agent; (b) to the development of criteria for vaccination and revaccination; (c) to determine more accurately which groups in the general population should be vaccinated. Several well controlled studies are under way at the present time and it is expected that others will begin

within the near future. (III) On the basis of studies reported in the European and American literature, an appreciable reduction in the incidence of clinical tuberculosis may be anticipated when certain groups of people who are likely to develop tuberculosis because of unusual exposure, inferior resistance, or both, are vaccinated. (A) In the light of present knowledge, vaccination of the following more vulnerable groups of individuals is recommended, provided they do not react to adequate tuberculin tests: (1) doctors, medical students and nurses who are exposed to infectious tuberculosis; (2) all hospital and laboratory personnel whose work exposes them to contact with the bacillus of tuberculosis; (3) individuals who are unavoidably exposed to infectious tuberculosis in the home; (4) patients and employees of mental hospitals, prisons and other custodial institutions in whom the incidence of tuberculosis is known to be high; (5) children and certain adults considered to have inferior resistance and living in communities in which the tuberculosis mortality rate is unusually high. (B) Vaccination of the general population is *not* recommended at this time except for carefully controlled investigative programs which, as a rule, will be best carried out under the auspices of official agencies such as the U. S. Public Health Service, state and municipal health departments and other especially qualified groups. (IV) BCG vaccine should not be made available for general distribution in the United States at this time because: (a) the most effective strain of BCG has not been agreed upon nor has fully satisfactory standardization of the vaccine been achieved; (b) the best qualified experts have not agreed as to the most effective method of vaccination; (c) fully satisfactory arrangements have not been perfected for transportation and storage of the vaccine.

The vaccine should be prepared only in accredited laboratories especially devoted to the task, in which virulent tubercle bacilli are not cultivated or handled and in which all other possible precautions are exercised to assure safety and quality of the product. Adequate record systems should be devised for management of statistical problems involved in recording and following large numbers of vaccinated people. . . (V) The Society believes that since BCG vaccination affords only incomplete rather than absolute protection, the most effective methods of controlling tuberculosis in the general population are: (a) further improvements of living conditions and the general health; (b) reduction of tuberculous infection, which can be accomplished by modern public health methods and the unremitting search among presumably healthy individuals for patients with infectious tuberculosis; (c) prompt and adequate medical and surgical treatment of patients with active disease; (d) segregation and custodial care of those not amenable to accepted forms of therapy; (e) adequate rehabilitation. . . . Vaccination seems unwarranted: (a) in areas in which the tuberculosis mortality rate is extremely low; (b) in localities in which the tuberculin test is of especial value as a differential diagnostic procedure.

15. Liver, Kidneys, Spleen

The Prothrombin Response to the Parenteral Administration of Large Doses of Vitamin K in Subjects with Normal Liver Function and in Cases of Liver Disease. A Standardized Test for the Estimation of Hepatic Function. *Paul N. Unger, Shepard Shapiro, and Shirley Schwalb, New York University College of Medicine, New York, N. Y.* J. Clin. Investigation 27:39-47, January 1948.

A standardized test is described for the determination of hepatic dysfunction by the estimation of the prothrombin response to the administration of large doses of vitamin K. The diluted plasma method was used for all prothrombin times (normal 39.5 plus or minus 2.5 seconds). An initial prothrombin time was taken, 76 mg. of vitamin K (Synkayvite) were given intravenously for four consecutive days, and the prothrombin time was estimated daily for seven days. The dividing line between positive and negative established itself somewhere between forty-five and forty-seven seconds. An initially high time which dropped to normal following the administration of vitamin K signified a vitamin K deficiency state and not evidence of liver damage. A positive test was manifest either by a time above forty-seven seconds which failed to respond to vitamin K, or a transient rise from a previously normal level to an abnormal one. Results were reported in 113 cases. Correlation with clinical findings, cephalin-flocculation and bromsulfphthalein tests showed this to be a reliable test of liver function. It appeared to be more sensitive than either of the other two tests employed and less subject to false positives. 24 references. 3 figures.—*J. H. Githens, Jr.*

Concentration of Urine Solutes by Young Infants. *Edward L. Pratt, Beatriz Bienvenu and Muriel M. Whyte, New Haven, Conn.* Pediatrics 1:181-87, February 1948.

Estimation of fluid requirements in infancy is a frequent problem and knowledge of minimal renal water requirement is of clinical importance. Five normal infants, 1 to 2 months of age, were fed a usual evaporated milk formula in which the added water averaged 55 per cent of the total volume. This was followed by a five-day feeding period of a comparable formula without added water. During the period of lowered fluid intake no significant change was noticed in serum sodium, chloride, bicarbonate or nonprotein nitrogen. A progressive rise in the concentration of urine solutes, as determined by freezing point depression, was noted. Water balances indicated no appreciable lose of body water under the conditions of fluid restriction imposed by the experiment. The reduction of fluid intake to 42 per cent of the usual value resulted in a decrease in urine volume from approximately 90 cc. per kilogram to 25 cc. per kilogram. Clinically,

therefore, 65 cc. per kilogram of the 150 cc. per kilogram usually offered infants of this age represents a margin of safety that may be effected by renal conservation of water.

The data presented indicate that young infants of this age have virtually the same ability to conserve water (as measured by upper limit of concentration of urinary solutes under conditions of fluid deprivation) as have adults. Similar renal capacity has not been showed for premature infants or for full term infants in the first ten days of life. A graph is presented for the estimation of renal water requirement of young infants on varying dietary intakes at given concentration of urine solutes or, less precisely, at varying urinary specific gravities. 4 references. 4 tables. 2 figures.—*H. M. Goldstein.*

16. Metabolic and Systemic Disorders

Reticulo-Endotheliosis (*Reticulo-Endoteliosis*). *Paul Freud, Dept. of Hospitals, New York, N. Y.* Pediat. Americas 6:149-66, March 1948.

Letterer-Siwe disease, Hand-Christian-Schüller xanthomatosis and eosinophilic granuloma are viewed as different aspects of a basic reticulo-endothelial disturbance. The pathologic changes consist of proliferation of histiocytes and giant cells, or eosinophils, later replacement by fibroblasts, and cholesterol infiltration. The cellular infiltration is primary and does not depend upon foci of elevated tissue cholesterol. This concept is supported by the acute picture of Letterer-Siwe disease without cholesterol accumulation and the lack of similar cellular changes in diseases characterized by high lipoid concentrations, as in diabetes mellitus and nephrosis. The cholesterol collections within the cells are not the result of phagocytosis but probably represent an altered intracellular metabolism. Large amounts of cholesterol have been demonstrated in such cells even in acute early reticulo-endotheliosis. 23 references. 12 figures.—*A. M. Bongiovanni.*

17. Milk; Infant and Child Feeding

Modified Self-Selection Method of Feeding Preschool Children in the Home. *Margaret F. Gutelius, Pharr, Texas.* Am. J. Pub. Health 38:1118-25, August 1948.

A policy of laissez faire in the feeding of 2 sisters was adopted by the parents as soon as the children were able to eat by themselves. The girls are at present 6 and 4 years old. The regimen was undertaken because the older child showed signs very early in life of becoming a feeding problem, which was probably aggravated by paren-

tal worry. In general the children ate whatever and whenever they pleased. In spite of the freedom allowed, a routine was followed which permitted them to develop adult eating habits in their own time. Three meals a day were prepared at regular hours and displayed attractively. The girls took what they wished in any quantity or nothing at all. They ate by themselves and the adult present tried to show no concern over what they ate or how they ate it. They could also help themselves or request food at any time between meals. Only a few minimal rules for behavior, such as not eating in the living room, were found necessary.

Foods were offered in as wide a variety as possible, with emphasis on natural ones and simplicity in preparation. Several raw fruits and vegetables were set out with each meal and made easily available for between-meal snacks. The whole grain variety of cereal products was used almost exclusively. Each day several different kinds of meat or other concentrated proteins were offered. The only curb on free choice of foods was the limitation on sweets (except honey and syrups). No sweets were allowed between meals and a limited amount with meals. Adequacy of the diets chosen by the children was demonstrated by keeping a careful record of everything they ate over a period of six weeks. The average daily diets met the recommendations of the National Food Guide except for a lower milk intake. However, good authority exists for believing that a pint of milk is sufficient in the early preschool years. The children were healthy and happy and ate with good appetites. Their table manners seemed to be about average for their age groups. They had unconventional eating habits but these became less marked as they grew older. They disliked mixtures like stews and tended to concentrate on a very few foods at each meal. Food jags were frequent, especially in the early years. About one-third of their diet was taken between meals but this consisted for the most part of fruits, vegetables and milk. 15 references, 5 tables. —*Author's abstract.*

(*Children not only take readily to regimentation of food and of other habits but actually prefer it. Protracted negativism in the child usually reflects parental dominance and rigidity, and unwillingness to permit the child to express his independence in matters which lie within his capacity for choice. The wise parent will not expect the child to carry responsibility for choices which may carry the penalty of handicap if recurrently the choice is a poor one. Most feeding troubles are symptomatic of more deep-seated conflicts of the parent-child relationship. Parents often are punitive in their reactions to the child's refusal to follow their orders. Yet even freedom of food choice may be so administered that the child interprets it as a punishment and an evidence of parental indifference to his needs. Such indifference may widen the breach between parent and child rather than abolish the underlying difficulty.*

It is interesting that the parents, especially the mother, were able

to stop worrying and institute a feeding regimen which was so permissive and limitless. Parents may accept intellectually the suggestions that feeding practices be changed but are often unable to carry out such advice because of psychologic temperaments. Helping parents emotionally as well as intellectually constitutes one of the most difficult roles of the physician.—ED.)

The Nutritive Value of Homogenized Milk. A Review. *G. M. Trout, Michigan Agricultural Experiment Sation, East Lansing, Mich.* J. Dairy Sc. 31:627-55, August 1948.

This is an evaluation of the contributing factors affecting the nutritive value of homogenized milk. The factors reviewed are: (1) palatability; (2) homogeneity; (3) curd tension; (4) digestibility; (5) miscellaneous. The following conclusions are reached. The homogeneity of properly processed homogenized milk assures equal distribution of the fat, vitamin A and added vitamin D. Homogenization retards or inhibits the developing of the copper-induced oxidized flavor. When properly stored and refrigerated, homogenized milk retains for a longer time the fresh flavor which contributes much to its palatability. The uniform consistency of properly homogenized milk, as showed by the absence of cream or butter granules, further contributes to its palatability. Proper homogenization changes normal hard-curd milk to a soft-curd milk and this appears to be digested slightly more easily but neither more quickly nor more completely than hard-curd milk despite a faster stomach-emptying time. Reduction in the size of the fat globules by homogenization does not increase the digestibility of the fat. The digestibility of the fat of fresh whole milk is so nearly complete that any marked increase in digestibility is not possible. Homogenized milk has been used successfully in the preparation of infant formulas and in infant feeding. Homogenized milk seems not to be associated with distress or sensation of overfullness during digestion. 136 references.

Crystalline Synthetic Vitamin A and Neovitamin A. *J. D. Cawley, C. D. Robeson, L. Weisler, E. M. Shantz, N. D. Embree, and J. G. Baxter, Distillation Products, Inc. Rochester, N. Y.* Science 107:346, Apr. 2, 1948.

Analysis of vitamin A as commercially synthesized by a new process has showed it to be chemically identical with natural vitamin A of marine origin. Further analyses indicate that neovitamin A, the geometric isomer of vitamin A previously isolated from fish-liver oils, occurs in both the synthetic preparation and the natural form in the proportions of vitamin A to neovitamin A of 1.5:1 or 2:1. It appears, therefore, that "vitamin A," physiologically speaking, must be considered as a mixture of two geometric isomers.

18. Miscellaneous

The Hippocratic Oath Formulated at Geneva, Second General Assembly, World Medical Association. Geneva, Switzerland. Sept. 8-11, 1948.

The World Medical Association held its Second General Assembly in Geneva, Sept. 8 to 11. Along with many other organizational matters a motion was passed by the Assembly that every new physician on receipt of his diploma subscribe to the following revised Hippocratic Oath:

"Now being admitted to the profession of medicine I solemnly pledge to consecrate my life to the service of humanity. I will give respect and gratitude to my deserving teachers. I will practice medicine with conscience and dignity. The health and life of my patient will be my first consideration. I will hold in confidence all that my patient confides in me. I will maintain the honor and the noble traditions of the medical profession. My colleagues will be as my brothers. I will not permit considerations of race, religion, nationality, party politics or social standing to intervene between my duty and my patient. I will maintain the utmost respect for human life from the time of its conception. Even under threat I will not use my knowledge contrary to the laws of humanity. These promises I make freely and upon my honor."

TABLE OF CONTENTS. Pediatria, Russia, No. 1, 1948.

(*Because of the great difficulties in obtaining access to Russian medical literature, it may interest some readers to note the nature of the pediatric studies being carried on in that country. Accordingly, the table of contents of a recent issue of the leading Russian pediatric journal is here listed. It is the first issue for* 1948 *of Pediatria, published in Moscow. Note the complete absence of any reference to antibiotics or chemotherapy.*—ED.)

Arshavsky, I. A. Problems of age factors in physiology at the VII Pan-Union Congress of physiologists, biochemists and pharmacologists, August 20-28, 1947. pp. 5-13.

Stuks, G. G. Epidemiology of epidemic hepatitis (Botkin's disease) in childhood. pp. 13-19.

Butiagina, A. P. Epidemic hepatitis in children. pp. 20-23.

Lablokova, M. L., and Kolesnikova, L. I. Relations between hepatitis and anti-measles serum. pp. 23-26.

Savvatimskaia, N. P. Researches on the pathogenesis of infectious jaundice in children. pp. 26-30.

Kalashnikova-Talaiko, A. Z. The secretions of the stomach in children with infectious jaundice. pp. 30-36.

Gotman, N. V. Resistance of the capillaries of the epidermis in infectious jaundice in childhood. p. 36.

Romanova, M. A. The morphology of the blood and ROE in the course of infectious jaundice in children. p. 38.

Dubnickaia, K. V. and Magarik, S. L. Diathermy of the liver in infectious jaundice in children. p. 39.

Gotman, N. V. and Kviatkovskaia, A. N. Glucose-insulin therapy in infectious jaundice in children. pp. 40-42.

Dubnickaia, K. V. The reaction of the epidermis to the ultraviolet rays in infectious jaundice in children. p. 42.

Magarik, S. L. and Polteva, U. K. Diet of children in infectious jaundice. pp. 43-46.

Nikulin, S. V. Hepatocholecystitis in children. pp. 46-51.

Kolner, R. U. Hepatocholecystitis due to giardiasis. pp. 51-53.

Kossiura-Shain, M. B. Diagnosis of cholecystopathy in children. pp. 53-56.

Shub, G. Z. Importance of duodenal intubation as a clinical method of examination in pediatrics. pp. 56-61.

Derzhavina-Karacheveeva, V. N. Work of the regional pediatric clinic of the Moscow District Department of Health. pp. 62-65.

Fediaevskaia, V. M. Play therapy. pp. 65-70.

Zabludovskaia, E. D. Centennial of the publication of Pediatria, by Stepan Khotovicky. pp. 71-73.

19. Musculoskeletal System

Rheumatoid Arthritis in Children. A Clinical Study. *N. S. Pickard, Kansas City, Mo.* Arch. Int. Med. 80:771-90, December 1947.

Thirty-five children with rheumatoid arthritis were observed for three years or more. In 45.7 per cent a respiratory infection was the outstanding event in the onset of the disease. In 20 per cent there was definite history of trauma and in 2 cases allergic reactions were associated with the onset. This disease is self limited in that the majority of cases will after a time reach a state of terminal quiescence. However of 28 cases followed more than five years, 9 had recurrences after two to eight years of quiescence.

The prognosis as to function varies according to the joint involved and seems to be best in the ankles and knees, and poorest in the elbows, carpal joints, and wrists. A persisting monarticular form may sometimes be seen and occasionally is difficult to differentiate from tuberculous synovitis. Rheumatoid arthritis may also closely simulate rheumatic fever. There is reasonably good basis for the removal of focal infection during the inactive phase of the disease. Thus far surgical intervention in the active phase has not been encouraging. 22 references. 4 tables.—*R. N. Paul.*

The Effect of Roentgen Irradiation on Epiphyseal Growth. (II. Experimental Studies Upon the Dog). *John A. Reidy, James R. Lingley, Edward A. Gall and Joseph S. Barr, Massachusetts General Hospital, Boston, Mass.* J. Bone & Joint Surg. 29:853-73, October 1947.

Roentgen dosages of from 800 to 1,200 r were directed over selected joints of 6 week old dogs. The treated area included the joint, epiphysis and adjacent metaphysis. The epiphyseal cartilage was profoundly affected and retardation of growth occurred in each instance. Mild bowing of the treated forelimb occurred in 8 of 12 animals. There was stimulation of growth at the untreated epiphysis of the treated long bones. From these and other experiments the conclusion is drawn that the clinical use of roentgen irradiation of growing epiphyses to control longitudinal growth inequalities in children must be considered as experimental and fraught with potential danger. Whether the danger is greater than is incurred in surgical procedures such as lengthening or shortening of the lower extremity and epiphyseodesis, must await further investigations. 6 references. 9 tables. 3 charts. 10 figures.

Tuberculosis of the Hip in Children. Certain Roentgenographic Manifestations, Secondary Changes in the Extremity, and Some Suggestions for a Program of Therapy. *H. R. McCarroll and R. D. Heath Washington University, St. Louis, Mo.* J. Bone & Joint Surg. 29:889-906, October 1947.

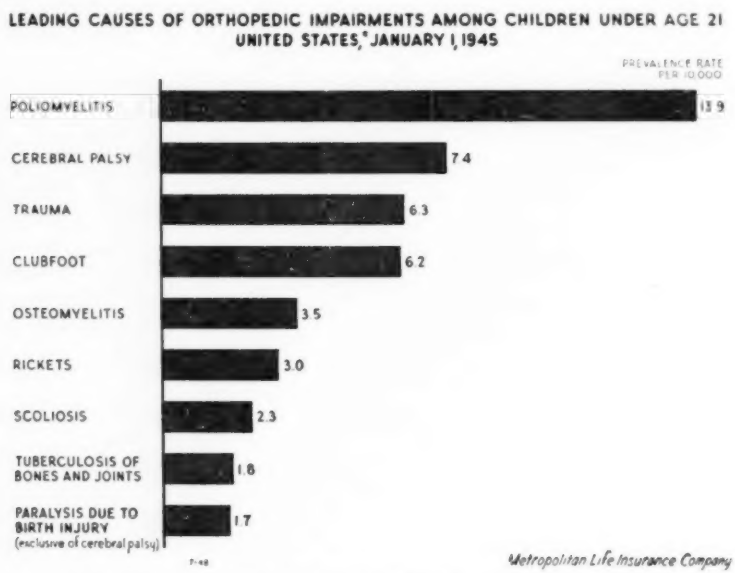
To accomplish an arthrodesis of the hip in a young child early enough to prevent massive destruction of surrounding bones, and prevent the extreme secondary changes in the extremity which result from prolonged fixation, is not easy. If the part becomes infected, massive destruction of the joint follows very rapidly. The incomplete bone development also makes surgical fixation of the joint more difficult. Prior to 1940, it was the policy of the authors to maintain continuous preoperative immobilization in plaster of paris spicas until the age of 8 or 9 years. Of forty-three hips immobilized for two to eight years in preparation for arthrodesis, satisfactory results were obtained in 31 instances or 72 per cent. The local results were not unsatisfactory, yet this form of treatment was classified as poor because of the extreme secondary changes occurring in these extremities subjected to years of immobilization and inactivity. As a rule the patients were left with shortened and atrophied extremities, and with knees so relaxed that lateral motion often equaled the degree of flexion and extension. The long bones were often so fragile that spontaneous fractures were not infrequent. Occasionally genu valgum and medial or anterior bowing of the tibia were also seen. In short, these individuals were as disabled from the secondary complicating factors as they originally had been from the hip joint tuberculosis itself.

Various forms of earlier operative fixation have since been tried. Plaster fixation of the hips was used for approximately six months

after the diagnosis had been established and this was followed by attempted arthrodesis. Intra-articular arthrodesis was attempted in 4 cases; draining sinuses followed and dissolution of the graft promptly occurred in all 4. The next step was the use of a massive extra-articular tibial graft bridging the joint space from the wing of the ilium to the greater trochanter. Here again the results were not encouraging and the graft often failed to serve as a permanent support. The Brittain type of isochiofemoral arthrodesis was next attempted and six such operations have been performed. Some technical difficulties have been encountered and some cases are found unsuitable for this type of surgery because of invasion of the ischium by the tuberculous process. In spite of these difficulties the Brittain arthrodesis seems to offer as good a possibility for an early successful arthrodesis as is available at present. 5 references. 10 figures.

Orthopedic Impairments Among Children. Statistical Bull., Metropolitan Life Ins. Co. 29: No. 5, 7-9, May 1948.

It is estimated that at least 400,000 children and young people under age 21 in the United States are more or less seriously handicapped by orthopedic impairments. Poliomyelitis is the leading cause, accounting for one-fifth of the handicapped under age 21. Next comes



*Excludes Delaware, Montana, Pennsylvania, and Virginia.
Source—Crippled children on State registers, reported to U. S. Children's Bureau

By courtesy of Metropolitan Life Insurance Company

cerebral palsy, a condition which has received little attention in our country until recent years. The accompanying chart indicates the relative frequency of the causative conditions. 1 table. 1 chart.

The Significance of Harrison's Grooves. *J. Naish and H. R. E. Wallis, Bristol, England.* Brit. M. J. 4550:541-44, Mar. 21, 1948.

The incidence and depth of Harrison's grooves were studied in various groups of children. In routine school inspection of 500 children, Harrison's grooves were present in 45.6 per cent. Of 17 that were unilateral, 13 were left sided. Grooves that were 3/16 inch or more in depth were found in 6.8 per cent. They were found more often in children who had suffered from pneumonia in early life and in children from very low-income families. They also occurred frequently in children who had had bronchitis, measles, pertussis and severe upper respiratory infections in early life but the statistical significance of these findings could not be proved. Twenty-five children who had unmistakable evidence of rickets eight years previously were examined and 16 (64 per cent) had grooves. A high proportion of these were in children known to have had severe rickets in infancy. In milder cases of rickets or those treated early, the incidence of grooves was not different from the normal group. On examining 100 children suffering from chronic bronchial asthma, Harrison's grooves were found in 79 per cent. Thirty-six per cent had grooves at least 3/16 inch deep and deep grooves were found more often in children whose asthma was of four or more years duration. This was the greatest incidence of grooves in any of the groups. Thirty-six children with congenital heart disease were examined. If the heart disease was severe, grooves were frequently found.

Theories as to the causation of Harrison's grooves are summarized. They are not caused by the insertion of the diaphragm as so many textbooks have stated. The exact mechanism of their formation remains in doubt but the results of this study seem to support the suggestion that deficient expansion of the lungs is an important factor in their production. Historians will be interested in the authors having traced the original description of lateral thoracic grooves to Edwin Harrison (1779-1847) in 1837 and not Edward Harrison (1766-1838) as has commonly been supposed. 27 references. 6 tables— *M. Maresh.*

20. Nervous System

New Drugs of Value in the Treatment of Epilepsy. *Frederic A. Gibbs, University of Illinois, College of Medicine, Chicago, Ill.* Ann. Int. Med. 27:548-54, October 1947.

In order to treat an epileptic patient as rationally as possible the type or types of epileptic seizure should be identified, and the proper

TABLE I. *Guide to Medical Treatment of Epilepsy*

Type of Epilepsy	Clinical	Age	E.E.G.	Medication	Average Adult Dose†	Limiting Side Effects	Signs of Sensitivity
Grand Mal	Convulsions	Any	Slow or fast spikes and petit mal variant. (Rarely grand mal discharges)	Dilantin	1½ grs. t.i.d. after meals Usual maximum 6 grs./day	Diplopia Staggering (May increase petit mal)	Overgrowth of gums Overgrowth of body hair Itching rash on extremities
Focal	Focal convulsions	Any	Focal spikes or Focal slow waves				Gastric irritation
				Phenobarbital	1½ grs. h.s. Usual maximum 3 grs./day	Sleepiness	
				Mesantoin	1½ grs. t.i.d. Usual maximum 6 grs./day	Sleepiness	Scarlatiniform rash* Fever Lymphadenopathy
				Bromides	18 grs. sodium bromide t.i.d. (Blood bromide 150-300 mg. per 100 c.c. of blood)		Acne Depression and confusion
Petit Mal (Pyknolepsy)	Frequent short lapses of consciousness. Blinking, head nodding.	Usually children	3 per second wave-and-spike	Tridione with monthly white count	4½ grs. t.i.d. or until seizures are controlled	Inability to see in a bright light Drowsiness	Hiccoughs Aceneform rash Leukopenia*
				Mebaral	6 grains	Sleepiness	
Myoclonic	Lightning-like jerks	Usually children	3 per second wave-and-spike	Ketogenic diet			Loss of Weight
Psychomotor	Periods of confusion with incoördination and apparently purposeful movements	Usually adults	Positive spikes Negative spike focus in temporal lobe with spread to anterior inferior part of head.	Any and all antiepileptic substances. (Medical treatment generally unsatisfactory.)			

* These signs of sensitivity require omission of responsible drug.
† Dose should be raised until seizures are controlled or until limiting side effects or signs of sensitivity develop.

drugs used. (See table). A detailed description of the clinical and electroencephalographic characteristics of various types of seizure is given in the text. This principle for medication is recommended: Start with the drug which is presumed to be most effective. Increase the dose to tolerance or to a level at which seizures are prevented. If the first drug reduces the number of seizures but does not prevent them adjust the dosage so that no more than tolerable side effects are produced. With this as a maintenance dose the next most promising remedy should be added. Steadily raise the dose of this supplementing drug to tolerance or until seizures are controlled. Repeat this procedure with each drug in turn, until seizures have been controlled or until all drugs have been tried at maximal tolerated dosage. Drugs which produce no definite benefit should, of course, be omitted, but before discarding the dosage should be raised to the maximum that is tolerated. "The mistake most commonly made in the treatment of epilepsy is *under-medication*, because the physician has assumed some arbitrary limit on dosage." The drugs at present available for the treatment of epilepsy are more effective against idiopathic than against symptomatic epilepsy. The informed practitioner should be able to treat successfully 75 per cent of patients with seizures. The remaining 25 per cent will be especially resistant cases, many with severe brain damage or additional complications, and should be given access to the most advanced and expert treatment by qualified specialists. 11 references. 1 table.

Some Clinical Aspects of Normal EEG in Epilepsy. *John Abbott and Robert S. Schwab, Massachusetts General Hospital, Boston, Mass.* New England J. Med. 238:457-61, Apr. 1, 1948.

The incidence of normal electroencephalograms in epilepsy is from 2 to 20 per cent, according to various investigators. Normal electroencephalograms were found in 21 per cent of 193 patients with a definite diagnosis of epilepsy who were examined according to accepted electroencephalographic procedure. All subjects were over 21 years of age. Thirty minute tracings were obtained including three minutes of hyperventilation. No record was included if the subject had had medication within forty-eight hours or if the last meal was longer than four hours preceding the time of testing. The age of those with normal electroencephalograms did not differ significantly from a corresponding group with abnormal tracings. The age of onset of seizures in cases with abnormal tracings was lower than in the normal group. Only one type of seizure was known in 40 per cent of the cases with normal electroencephalograms while only 10 per cent of those with abnormal tracings had only one type of seizure. Patients with normal tracings had fewer attacks and required less medication than those with abnormal tracings. Nocturnal seizures were more frequent in the normal tracing group. A familial history of seizure was greater in

the group with abnormal tracings. Thus, in general, a normal electroencephalogram is a favorable prognostic indication in persons with convulsive state. 10 references. 7 figures.—*J. A. Churchill.*

Erb's Palsy. *B. Wolman, Royal Manchester Children's Hospital, England.* Arch. Dis. Childhood 23:129-31, June 1948.

Out of 125 cases of Erb's palsy, 68 were leftsided, 53 were rightsided and 4 were bilateral. Fifty-four cases occurred in primigravida, 29 in second pregnancies and 42 in subsequent pregnancies. The average birth weight was 11.5 pounds. Treatment averaged two years in length and consisted of adequate splinting, massage and exercise. Ninety per cent of the cases whose treatment was started before the end of the first neonatal month recovered full function, whereas only 30 to 40 per cent recovered full function when treatment was begun after the first month. Inadequate or delayed therapy resulted in permanent contractures of the muscles innervated by the fifth and sixth cervical nerves. 4 references. 1 table.—*A. N. Evans.*

21. Newborn Period, Prematurity

Formula Rooms for Newborn Infants in Lying-In Hospitals. A Preliminary Study on Supervision and Certain Technics for Preparation. *Helen M. Wallace, Harold Abramson and Margaret A. Losty, New York, N. Y.* Pediatrics 1:758-66, June 1948.

The formula rooms and certain procedures in 113 hospitals giving maternity and newborn care in New York City were studied by members of the New York City Department of Health. Observations showed lack of supervision of formula preparation, the use of untrained personnel and the limited use of some type of terminal sterilization of formulas. These inadequacies were more evident in hospitals with smaller maternity and newborn nursery services. Considerable variation in opinion prevailed as to the need for terminal sterilization of formulas, the temperature required and the time of application necessary to assure safe formulas. 21 references. 4 tables.—*Author's abstract.*

Penicillin in Drops for Prophylaxis Against Ophthalmia Neonatorum. A Single Instillation Method. *H. Charles Franklin, University of Tennessee College of Medicine, Memphis, Tenn.* South. M. J. 41: 320-26, April 1948.

Within one hour after birth 4 drops of penicillin solution were dropped into the conjunctival sac of each eye after preliminary cleansing and irrigation with sterile saline solution. The solution of penicillin was made with the sodium salt, 2,500 units per cc.: it was refrigera-

ted in a special container, and discarded after five days. All purulent discharges were cultured. Of 1,177 infants, 13 or 1.1 per cent, exhibited pus in one or both eyes after penicillin prophylaxis. The pus appeared from the third to the twelfth day of life. Follow-up observations at home on the fourteenth to the seventeenth day were made with 952 infants: 94.7 per cent were normal; 2.9 per cent developed pus; 1.5 per cent had redness of the conjunctiva, swelling of the lids or watery discharge; the mother gave a history of eye infection in 0.8 per cent. Cultures were positive for 20 of the 21 studied. There were no instances of gonococcic ophthalmia.

In discussing this paper, G. J. Vosburgh enumerated the disadvantages of silver nitrate prophylaxis: high incidence of acute conjunctivitis, danger of using concentrations of silver nitrate stronger than 1 per cent, and instability of silver preparations. It would appear that penicillin is safer, easier to use and more efficacious. He has used an alternate method of penicillin prophylaxis: parenteral penicillin (200,000 units) to the mother within eighteen hours of delivery, and 20,000 units to the infant within fifteen minutes after birth. Of 2,000 infants, none developed gonococcic ophthalmia and less than 1 per cent had conjunctivitis. This method of penicillin prophylaxis seems preferable because the quantity administered is accurately known, action is prolonged and the dangers of local injury and introduction of infection are eliminated. Parenteral penicillin, however, has the disadvantages of expense and inconvenience for home use. It may mask the manifestations of syphilis, or even precipitate a Herxheimer reaction. 4 references. 4 tables. 2 figures. 1 chart.—*B. J. Shuman.*

Two Cases of Tetanus Neonatorum. *C. A. St. Hill and H. Lederer, University of Liverpool, Liverpool, England.* Brit. M. J. 4559:980-81, May 22, 1948.

Both infants here reported had been delivered at home by midwives, and the mothers had dusted the umbilical stump with baby powder. The powder used in case 2 yielded a good growth of Clostridium tetani but no organisms were isolated from that used in the first case. 2 references.—*R. N. Paul.*

Physical Growth of Chinese Infants. *S. Y. Gin. Shanghai, China.* J. Pediat. 32:275-77, March 1948.

Studies were made of the body size of nutritionally selected newborns and infants of the first year of life. Fifty per cent of male infants had birth weights between 2.84 Kg. and 3.25 Kg. and females between 2.82 Kg. and 3.24 Kg. The central vertex-heel length was 48.2 to 50.2 cm. for males and 48 to 49.9 cm. for females. The central vertex-rump length was from 32.7 to 34.3 cm. for males and 32.4 to 34 cm. for females. The rate of growth of infants during the first year of life was greatest during the first three months. Increase in

the means from 0.5 to 3.5 months was greater than that from 6.5 to 9.5 months by approximately 1.75 Kg. for weight, 4.5 cm. for stature and 3.1 cm. for stem length.—*Author's abstract.*

The Absorption of Vitamin A in Prematurely Born Infants. With Experience in the Use of Absorbable Vitamin A in the Prophylaxis of Retrolental Fibroplasia. *Stewart H. Clifford and Kathleen Fahey Weller.* Pediatrics 1:505-11, April 1948.

This study was undertaken to discover the most effective means of administering vitamin A to premature infants. Forty-two premature infants were tested for vitamin A absorption after the oral ingestion of 0.5 cc. (35,000 U.S.P. units) of percomorph liver oil. Only 3 (7 per cent) showed good absorption levels. Forty-one were tested for vitamin A absorption after the oral ingestion of 2 or 3 cc. (16,000 or 24,000 U.S.P. units) of water soluble vitamin A in a vehicle using as a solvent either alcohol, propylene glycol or the poloxyethylene derivative of sorbitan monolaurate ("Vi-Penta" and "Vi-Syneral"). Of these 37 (90 per cent) showed good absorption levels. Warkany's studies had suggested the possible role of vitamin A deficiency in the production of retrolental fibroplasia. In the present studies retrolental fibroplasia was not prevented from developing in a certain number of premature infants by the daily oral administration of 5,000 U.S.P. units of water soluble vitamin A. One infant developed this condition in spite of the above oral dose coupled with a daily intramuscular injection of 20,000 U.S.P. units of vitamin A in oil. 8 references. 3 tables. 2 charts.—*Author's abstract.*

22. Nutrition

Relation of Lesions of the Tongue in Children to Niacin Deficiency. *Harry Bakwin, New York, N. Y., H. S. Reardon, Ann Arbor, Mich., James S. Winn, New Brunswick, N. J., Margaret S. Tenbrinck, Maxine L. Stern and M. G. Engel, New York, N. Y.* Am. J. Dis. Child. 74:657-68, December 1947.

Tongue lesions are common in children. During a four year period (1942 to 1945) 225 children with tongue changes were seen in the wards and outpatient department at Bellevue Hospital. The types of lesions may be divided into four groups: acute glossitis; glossitis migrans or geographic tongue; mild chronic swollen tongue characterized by enlargement of the fungiform papillae at the tip and decrease of the filiform papillae in some areas; and the fissured tongue where there is swelling and fissuring and the fungiform papillae appear as large red dots. The effect of large doses of niacinamide (8 to 20 mg. per kilogram of body weight) on the tongue lesions in children was studied and the results compared with an untreated group. Acute glossitis sub-

sided spontaneously without niacin therapy, revealing an underlying tongue lesion. Glossitis migrans was not influenced by niacin therapy. A larger proportion of patients with swollen and fissured tongues showed improvement after niacin therapy (14 out of 17) than did those who received no therapy (4 out of 16). In no patient was complete cure affected although treatment was continued in 2 patients for as long as twenty-four and twenty-eight months respectively. The diets of children with tongue changes were not demonstrably different from the diets of children without tongue changes. These results lend support to the view that niacin has a favorable influence on the nutrition of the tongue. They fail to substantiate the view that the tongue lesions commonly seen in children are due to niacin deficiency. 22 references. 4 tables. 1 figure.—*Author's abstract.*

The Nutritional State During the War and After. VI. *E. W. Adcock, H. E. Magee, E. H. M. Milligan and H. S. Townsend.* Month. Bull. Min. Health & Emerg. Health Lab. Serv. 7:153-55, July 1948.

Clinical surveys were made of the nutritional state of certain sections of England between February 1947, and May 1948, inclusive. Investigated were: (a) young factory workers of both sexes under 25 years and grammar school boys of 13 years upward; (b) groups of housewives with special reference to those with families whose youngest members were adolescents; (c) school children aged 5 to 15 years. In none of these groups was any frank deficiency disease observed, nor did the nutritional status seem less favorable than in previous years. Tables are given of public health phenomena which reflect to some extent the nutritional status. "A general improvement is apparent." 3 tables.

Vitamin C in the Blood and Urine of the Newborn and in the Cord and Maternal Blood. *Brenton M. Hamil, Bertha Munks, B. S., Elsie Z. Moyer, M. S., Mildred Kaucher, M. S. and Harold H. Williams, Ph.D., Henry Ford Hospital and the Children's Fund of Michigan, Detroit, Mich.* Am. J. Dis. Child. 74:417-33, October 1947.

The levels of vitamin C in the blood varied widely among the individual women and infants during the first week postpartum. In general, concentrations of vitamin C in urine were high during the first 2 days of life but dropped to low levels by the fourth day. The concentration of vitamin C was determined in blood from the umbilical cord, in venous blood of the mothers, and in the capillary blood and urine of infants during their first week of life. The vitamin C content of cord blood ranged from 0.66 to 2.18 mg. per 100 cc. Maternal serum contained from 0.04 to 1.19 mg. per 100 cc. on the first day postpartum. The values for the infants' blood ranged from 0.20 to 1.72 mg. per 100 cc. The levels of vitamin C in the urine and plasma declined during the first week of life. 46 references. 3 tables.

Metabolism of Women During the Reproductive Cycle (XVI. The Effect of Multivitamin Supplements on the Secretion of Vitamin A in Human Milk). *Marjorie Lesher, Abner Robinson, James K. Brody, Harold H. Williams and Icie G. Macy, Children's Fund of Michigan, Detroit, Mich.* J. Am. Diet. A. 24:12-16, January 1948.

Vitamin A was determined in the food, as eaten, and in twenty-four hour collections of the mature milk of 7 healthy mothers who were successfully nursing their infants. The mothers were then given each day supplements of 50,000 I.U. of vitamin A (*This amount is equivalent to* 14.285 *micrograms.*—ED.) The average daily intakes of vitamin A during the control periods ranged from 800 to 3,000 meg. The supplement was over four times as great. The average daily concentrations of vitamin A in the milk during the control periods ranged from 43 to 95 meg. per 100 cc. For the final days of supplementation the range was 88 to 318 meg., representing increases of 81 to 300 per cent. The mothers secreted totals of 21.2 to 1,353 meg. of vitamin A on the final days of supplementation as compared with 132 to 573 meg. during the control period. 34 references. 1 table.

(*It is obviously uneconomical to give amounts of vitamin A to lactating women beyond their requirements in an attempt to increase the content of this vitamin in the secreted milk, which contains less than* 1 *per cent to less than* 6 *per cent of the vitamin A given.*—ED.)

The Absorption of Orally Administered Emulsified Lipid in Normal Children and in Children with Steatorrhea. *Charles D. May and Charles Upton Lowe, Harvard Medical School, Boston, Mass.* J. Clin. Investigation 27:226-30, March 1948.

A comparison was made between the rates of absorption of vitamin A ester in an unemulsified oily state and in emulsified forms when administered orally to normal children and children with achylia pancreatica and other types of steatorrhea. The data were obtained from 14 normal children, 14 children with achylia pancreatica and 6 children with steatorrhea due to other causes. The rise in the plasma level of vitamin A in normal children was essentially the same whether the vitamin A ester was given in an oily or an emulsified state. In achylia pancreatica and other forms of steatorrhea the rise in the plasma vitamin A was very slight with oily vitamin A ester given orally but the rise following emulsified vitamin A ester was usually near normal. It is suggested that the emulsified preparations of vitamin A ester, which contained particles approximating 0.5 microns in diameter, are absorbed directly through the mucosa without the aid of lipase in accord with Frazer's partition hypothesis. The implications of improved absorption resulting from oral administration of emulsifed lipids to patients with steatorrhea are discussed. 13 references. 2 tables.

Comparitive Nutritive Value of Casein and Lactalbumin for Man. *Arthur J. Mueller and Warren M. Cox, Jr., Mead Johnson and Company, Evansville, Ind.* J. Nutrition 34:285-94, September 1947.

Casein and lactalbumin have been fed at the low intake level of 2 per cent of the calories to 4 healthy adults following a twelve day period of protein depletion. Two four-day periods of supplementation with each protein were alternated with four-day depletion periods. Nitrogen balance studies and calculated biologic values indicated that casein and lactalbumin were equally effective in maintaining nitrogen balance. 15 references. 3 tables. 1 figure.

23. *Parasitic Diseases*

Toxoplasmosis in Childhood. *Eduard Glanzmann, University Children's Clinic (Jenner Hospital), Bern, Switzerland.* Bull. Schweiz. Akad. d. med. Wissensch. 2:345-62, May 1947.

Three cases of toxoplasmosis are reported, emphasizing the existence in Switzerland of this disorder. *Case* 1:—An infant girl, now aged 14 months, who had had icterus neonatorum in the first postnatal week, suffered attacks of tonic convulsions and increased tonicity of the extremities since the age of 3 months. Internal hydrocephalus with radiographic evidence of increased intracerebral pressure and calcification in the region of the choroid plexus, together with bilateral coloboma of the macula and mental retardation, led to the diagnosis of congenital toxoplasmosis. Spinal fluid cell count was 16, with Pandy test positive. Serum calcium, phosphorus and phosphatase values were normal. A cleft palate was present. *Case* 2:—A girl, 7½ years old, was dwarfed: height 76 cm.; weight 6,790 Gm.; head circumference, 44 cm. Microphthalmia, gross tremor of the extremities, increased tonicity, calcification of the choroid plexus and mental retardation were thought diagnostic of toxoplasmosis. Dwarfism was due to an almost complete absence of enchondral ossification. The upper humeral epiphyses showed cauliflower-like enlargements; the sternal ends of the ribs were enlarged and goblet shaped; the carpal and tarsal bones were demineralized; the skull, ribs and diaphysis of the extremities were sclerotic and similar to marble bones, apparently because of compensatory periosteal bone formation. In this family, 3 siblings had died in infancy of cerebral disease. *Case* 3:—A boy, aged 4 years 4 months, had calcification of the plexus region, microcephaly, widespread chorioretinitis, and idiocy. 14 references.

(*In the 3 cases here described the evidence for toxoplasmosis is clinical only. In case 2 the bony lesions appear to be akin to chondrodystrophy in the reproduced roentgenograms.*—ED.)

Incidence of Oxyuriasis Among a Group of School Children in Honolulu. *Joseph E. Alicata, Ph.D and Anna Y. Kartman, M. A. Honolulu, Hawaii.* Hawaii M. J. 7:214-15, Jan.-Feb. 1948.

This paper presents the results of a brief survey of the incidence of pinworm infection among a group of young children attending one of the schools in Honolulu. In the tests NIH swabs were used by the parents according to written instructions. Children found positive on the first test were not reexamined. Those found negative were tested a second time. A total of 138 children were examined, whose ages ranged from 2½ to 7 years. Of these, 71 were of Caucasian and 67 of Oriental ancestry. There were 65 boys and 73 girls. Of the 138 children thus examined 43 (31.1. per cent) showed pinworms. There is a possibility that the true incidence is higher, since, according to Sawitz, one examination should reveal about 70 per cent of the positives, two examinations about 80 per cent, and seven examinations are necessary to find 96 per cent. The incidence of infection among the two sexes was about equal. The number of children in each age group was too small for adequate generalizations. Of the 71 Caucasians 29, or 40 per cent, were positive; of the 67 Orientals 14, or 21 per cent. 3 references. 1 table. 2 figures.

24. Pathology, Anatomy, Bacteriology

Age Changes in Lymph Nodes. *F. A. Deuz, University College Hospital Medical School, London, England.* J. Path. & Bact. 59:575-91, No. 4. 1947.

Lymph nodes show differences in age changes dependent upon function and anatomic position. Superficial nodes form one group, and deep nodes which are regional to mucous membranes another. Both groups reach their maximal development in childhood and decrease in size after puberty. In inguinal nodes, trabeculae and germinal centers are poorly developed at all ages. In childhood the deep cervical nodes show well developed trabeculae and many large active germinal centers. At puberty there is some diminution in size of the nodes resulting from retrogressive changes in the germinal centers but subsequent changes are slight and the deep cervical nodes do not show the same loss of cortical tissue as is found in the inguinal nodes. Germinal centers occur in the active form in childhood and commence to retrogress at puberty. They reach their maximal development between 5 and 10 years of age, persist in the active stage until adolescence and then appear in the resulting phase, reduced in size and number but persisting in most lymph nodes for the rest of the life of the indivi-

dual. At any age period the stimulus of local inflammation may cause the node to proliferate and take on the characters of the node found in childhood. 62 references. 12 figures.

Oral Immunization. *C. E. Dolman, University of British Columbia, Vancouver, B. C., Canada.* Am. J. M. Sc. 215:327-51, March 1948.

The most promising field for oral immunization would seem to be those infections in which the alimentary canal is the customary portal of entry. However, a thorough review of the literature indicates that the so-called enterotropic microorganisms, such as the typhoid-paratyphoid-Salmonella group, the Shigellae and Vibrio cholerae, are less reliable and effective immunizing agents when taken orally than when subcutaneously administered, as judged by the levels of titratable antibodies attained, and of protection displayed by vaccinated experimental animals or man. A critical analysis of the statistical data on specific resistance to infection showed by vaccinated populations in endemic or epidemic areas points to a similar conclusion. Favorable reports upon oral immunization against nonenterotropic microorganisms appear even more unconvincing under scrutiny.

Certain antigens may be absorbed from the intestinal tract but in irregular and unpredictable amounts. Such absorption is of prophylatic significance to the host only to the extent that it results in specific antibody formation. To ensure passage of effective amounts of antigen through the intestinal mucosa into the splanchnic reticulo-endothelial and lymphoid tissues would entail oral administration of inconvenient and perhaps dangerously heavy dosages. A merely local intestinal immunity, even if it guaranteed the inviolability of the whole length of the tract, would afford no protection against the contingency of a normally enterotropic microorganism gaining access to the host by an unusual route. The phenomena which Besredka ascribed to complete and specific impermeability of the locally immunized intestinal mucosa, seem in fact to derive from the local development and temporary retention of antibody globulin within the mucosa.

In recent years, improved manufacturing methods have increased the potency and reduced the reaction-producing properties of antigens so that parenteral administration is now generally accepted as an innocuous procedure. There is also growing recognition among practitioners that immunity is a relative state, needing to be maintained by measured booster stimuli given at fairly regular intervals. The many uncertainties surrounding the oral route of administration, and the unscientific abuses to which it may be put, should deter licensing authorities from authorizing distribution of antigens intended for oral immunization. 189 references.—*Author's abstract.*

25. Physiology, Biochemistry

Mechanism of Action of Serum Albumin Therapy in Internal Medicine. *S. H. Armstrong, Peter Bent Brigham Hospital and Harvard Medical School, Boston, Mass.* Am. J. Med. 4:390-97, March 1948.

The use of large amounts of human albumin to increase the osmotic properties of plasma in the treatment of various diseases is discussed. Two patients with cirrhosis of the liver who failed to show an increase in serum albumin while receiving nutritional therapy, were given an initial total dose of over 700 Gm. of serum albumin at a rate of over 50 Gm. per day. Ascites formation stopped within two weeks. Paracentesis prior to therapy decreased the period required for ascitic arrest. Maintenance doses of 20 Gm. per week for patients with severe cirrhosis and 100 Gm. per week for patients with terminal cirrhosis are recommended. A patient with idiopathic hypoproteinemia responded to albumin therapy with a marked diuresis of sodium and water and loss of edema. Another patient with similar disease failed to respond to albumin therapy, except for an initial diuresis. Failure in this case was ascribed to increased capillary permeability to albumin.

Serum albumin was found to be valuable in restoring plasma osmotic pressure to normal following operation on patients with constrictive pericarditis. A similar action on plasma osmotic pressure by albumin has been helpful in decreasing edema in patients with hypoproteinemia due to malignancy. Albumin therapy in patients with congestive heart disease is complicated by the risk of increasing an already large blood volume and producing pulmonary edema. Patients with nephrotic syndrome, adult type, had no change in status during albumin therapy. Large doses of albumin resulted in a diuresis of water and sodium without significant increases in serum osmotic pressure. Following therapy the plasma albumin level fell and edema recurred. 33 references.—*G. R. Wade.*

Respiratory Acidosis and Alkalosis in Children. *Samuel Spector and Charles F. McKhann, Cleveland, O.* J. Pediat. 32:227-45, March 1948.

Respiratory acidosis is due to increased blood carbon dioxide as a result of: excess in the atmosphere, obstruction to its escape from the alveoli, prevention of its transport from the blood to the alveoli or central suppression of respiration. Bronchiolitis in children may result in such acidosis. Respiratory alkalosis may result from hyperventilation as in salicylate intoxication, encephalitis, or hyperpyrexia. In acidosis or alkalosis of this type, the total plasma carbon dioxide may vary in a direction opposite to that expected. To avoid error the plasma *p*H must be determined.

Respiratory Acidosis	Respiratory Alkalosis
1. Increased retention of CO_2 in the alveoli, produces	1. Increased escape of CO_2 from the alveoli produces
2. increased plasma $H.HCO_3$ which if not compensated by increased $B.HCO_3$, produces	2. decreased plasma $H.HCO_3$ which if not compensated by decreasing $B.HCO_3$ produces
3. decreased *p*H and uncompensated acidosis.	3. increased *p*H and uncompensated alkalosis.
To compensate:	To compensate:
$B.HCO_3$ must increase to restore the ratio $H.HCO_3$:$B.HCO_3$ toward 1:20.	$B.HCO_3$ must decrease to restore the ratio $H.HCO_3$:$B.HCO_3$ toward 1:20.
This can occur by:	This can occur by:
1. Increasing base available for union with HCO_3—by	1. Decreasing base available for union with HCO_3—by
2. decreasing plasma chloride through	2. increasing retention of a fixed anion such as
3. increasing urinary excretion.	3. retention of chloride by preferential urinary excretion of HCO_3—or other anions such as organic acids.
4. Administration of chloride seems contraindicated.	4. Administration of chlorides appears indicated.

When the respiratory mechanism is impaired, the responsibility for restoration of acid-base balance falls on the kidneys. By selective excretion of appropriate ions, the $H.HCO_3$:$B.HCO_3$ ratio may be adjusted toward normal. This process is slow and not completely efficient. Correction of the underlying disease is essential. 14 references, 1 table, 8 charts.—*A. M. Bongiovanni.*

26. *Psychology, Psychiatry*

Common Behavior Disturbances in the First Two Years of Life. *Benjamin Spock, Rochester, Minn.* J. A. M. A. 136:811-13, Mar. 20, 1948.

Behavior disturbances during the first year are relatively uncommon, in the author's opinion, because of the ease with which most infants can be managed. Feeding problems are chiefly caused by maternal insecurity and rigidity, impatient introduction of the first solid food, failure to allow for variations in appetite especially around the age of one year, efforts at weaning for which the infant is not ready. The physician can help to avoid issues by routine advice that encourages flexibility, self regulation and allowance for readiness, and prepares the mother for common minor difficulties.

In the second year mothers are frequently frustrated by feeding problems, failure to achieve toilet training or rebellion against it, difficulty in controlling and disciplining the child. These are traced to the child's growing egotism, negativism, intense activity and explorativeness and to the inexperienced parent's lack of understanding of

the meaning of the child's normal behavior. It is advised that parents wait for definite signs of readiness in bowel training such as predictable regularity or a signal from the child, and a two-hour retention in urine training. Regarding general management the parent can be taught to rely on removal of a majority of breakable objects, provision of enough household objects for playthings, removing the child from forbidden activities and distracting him elsewhere. A conveniently located guidance nursery for casual attendance by mothers and children aged 1 to 3 should help during this difficult period.—*Author's abstract.*

Psychometric Testing of Patients Who Had Brain Tumors Removed During Childhood. *L. A. French, University of Minnesota Hospital, Minneapolis, Minn.*, J. Neurosurg. 5:173-77, March 1948.

The problem of whether mental deterioration follows the removal of a brain tumor is especially important in children with relatively benign cerebellar tumors, since after radical surgical excision, these tumors usually do not recur. The results of psychometric testing of such patients are given. The average age of the patients was 7½ years at the time of surgery, with a range from 3 to 12 years. The histologic diagnosis in 8 patients was astrocytoma, in 1 it was angioblastoma, and in 1 it was tuberculoma. Psychometric testing was performed eight months to twelve years following surgery, with an average interval of 4¾ years.

Since the same tests could not be used with all cases direct comparison was not possible but the results were obvious enough for some generalizations. The average IQ was at the high end of the normal range (4 patients were of average intelligence, 4 of high average or superior intelligence). Deterioration sensitive tests (such as the Hunt test for organic brain damage and the Koh's blocks) showed in 5 cases better than average performance, in the others just average performance. Visual motor ability and ability to analyze forms into components was very good except in 2 patients in whom it was only fair. There was, therefore, no psychometrically determinable deterioration in these cases.—*Author's abstract.*

27. Public Health, Epidemiology

Health Conditions in Europe. Statistical Bull. Metropolitan Life Ins. Co. 29:1-4, May 1948.

Despite the devastation wrought by World War II and the resulting depression of living standards, relatively favorable mortality conditions prevail among many European peoples. Almost everywhere in Western Europe the death rates in 1946 and 1947 were about equal to or even below the prewar level. For Central and Eastern Europe

the reports are meagre but seem to be in the same direction. No recent information is available for Poland, Yugoslavia, the U.S.S.R. or Greece. The trend of tuberculosis, generally a sensitive index of health conditions, varies greatly. All-time low death rates from tuberculosis have been established in the postwar period in England, France and Belgium. The Scandinavian countries have had no increase in tuberculosis either during the war or after. In contrast, sizable increases, both in cases and in deaths, have been recorded throughout central Europe and the Balkans. The postwar record for infant mortality is also remarkably good. This reflects the special provisions made for pregnant women and infants by the Europeans themselves and the efforts of outside nations in their European relief programs. Sweden's record is outstanding, with a rate of only 26 per 1,000 live births in 1946, the lowest ever recorded for any European country. The rates for the other countries per 1,000 live births in 1947 were as follows: Austria 76, Belgium 75, England and Wales 41, Finland 59, France 66, Hungary 111, Italy 82, Netherlands 34, Switzerland 39. Typhoid fever is still widespread. Diphtheria is now receding though still well above prewar levels. Typhus has had only a moderate rise in incidence since the close of the war, limited to the usual endemic areas of the disease such as Rumania, Bulgaria and Hungary. 1 table.

Report of the Survey Mission to the Far East (Other than China) International Children's Emergency Fund. *Report of the Programme Committee of the United Nations Economic and Social Council, dated July* 1, 1948.

The International Children's Emergency Fund of the United Nations sent a survey committee in May and June 1948 to the Philippines, Hong Kong, Singapore, Malay Federation, North Borneo, Sarawak, Brunei, Indonesia, Indo-China, Siam, Burma, India, Pakistan. The survey team was made up of Dr. Thomas Parran, former Surgeon-General of the United States and Dr. C. K. Lakshmanan, Director, All India Institute of Hygiene and Public Health, Calcutta.

Among the observations made, one striking feature was the high infant mortality rate in all of the countries visited. Only in Siam was the rate less than 100 per 1,000 live births. In many areas the rate was 200, and in some limited geographic areas rates as high as 200 to 300 per 1,000 live births. Of the specific diseases, malaria proved the leading health problem in every country. In most it is a leading cause of death among children. In India alone it causes over one million deaths per year. Many children were observed hospitalized for tuberculous meningitis, miliary tuberculosis and bone tuberculosis. In the few places where Mantoux tests were performed, the reactive rates, age by age, were more than double those of the western countries. For example, in one country a recent survey found more than 20 per cent of children at 6 years of age to be tuberculin positive. (*The percentages of positive tuberculin reactors in most European countries*

is probably higher than 20 per cent.—ED.) In practically every country great interest was manifested concerning the possibility of tuberculosis prevention through BCG.

Syphilis is widely prevalent, and has increased greatly as a result of the war. In some areas, as a result of Japanese occupation, the disease is widely epidemic. Medical service and drugs are often inadequate or entirely lacking. In Indonesia and Siam yaws has become epidemic as a result of the war. During the Japanese occupation and subsequently the prevalence of this highly disabling but readily curable disease is estimated at 15 per cent of the rural population in Java. The disease initially attacks children 2 to 6 years of age. Dysentery contributes substantially to the high infant mortality rate. In addition, intestinal parasites have a debilitating effect. It is quite common to see children seriously ill with malaria, dysentery, and intestinal parasitisms simultaneously. Malnutrition, often in severe degrees, is the usual rather than the unusual situation among children. Similar malnutrition often affects the pregnant and nursing mother, making it impossible for her to suckle the infant. Since milk is scarce or entirely unknown, the infants of such mothers have little or no chance for survival. In many large areas, there is no child health or welfare machinery. Detailed recommendations are made for remedial public health measures, including tuberculosis and malaria control and supplementary feeding programs.

(*In July* 1948 *the 26-nation Executive Board of the Children's Fund set up plans for the allocation of* $3,000,000 *to nine Far Eastern countries other than China, which is already benefiting from a* $12,000,000 *program. In addition to the* $3,000,000, $300,000 *was earmarked for a coordinated regional program aimed at controlling malaria. This provides for the organization and equipment of antimalarial teams which will go into sections where the problem is particularly grave.*

A breakdown of the $3,000,000 *follows: Southeast Asia: Indonesia* - $800,000; *Indo-China* - $300,000; *Siam* - $100,000; *Philippines* - $300,000; *United Kingdom Territories* - $250,000; *Burma* - $150,000; *India* - $750,000; *Pakistan* - $250,000; *Ceylon* - $100,000.—ED.)

Child Feeding in Europe Under the International Children's Emergency Fund *M. M. Eliot, Washington, D. C.* Am. J. Pub. Health 38:1-7, January 1948.

During World War II, the health of children in the countries closest to enemy action suffered as a result of inadequate food even though mothers and children had first claim on certain scarce foods of high nutritive value. Although conditions have improved considerably in some areas, more than 10 European countries and China still need outside assistance to supplement their own efforts to provide the foods and health services essential for rehabilitation of some 20,000,000 undernourished children. The International Children's Emergency Fund was set up as a specialized agency of the United Nations in 1946 and

was directed to emphasize three main activities: (1) supplementing the essential food and other supplies needed to alleviate malnutrition and disease in children and to safeguard the health of expectant and nursing mothers; (2) encouraging the reestablishment of children's institutions and services destroyed by war; (3) enlisting cooperation of other branches of the United Nations in providing fellowships for training of health and welfare personnel for work with children. Provision of a supplementary meal to children has been the first undertaking in most countries. Food distribution must be on the basis of need, without discrimination because of race, creed, nationality status or political belief.

Funds and food for the operation of child feeding programs under ICEF come from governments, from voluntary agencies and from individual contributions. Each participating country develops its own programs with the assistance of the field technical staff and consultants of ICEF. Fund officials and national operating agencies have been guided by the recommendations of a Committee on Child Nutrition sponsored jointly by the Food and Agriculture Organization and the World Health Organization, which met in Washington in 1947 following the International Pediatrics Congress and which brought together pediatricians and other specialists in nutrition from 13 countries.—*Author's abstract.*

28. Respiratory System

See Index for Related Articles

29. Skin, Teeth, Hair

See Index for Related Articles

30. Social, Economic, and Organizational Problems

Membership in World Health Organization. *New Public Laws.* Pub. Health Rep. 63:1070-71, Aug. 13, 1948.

On June 14, 1948, The President signed a Joint Resolution of Congress authorizing acceptance by the United States of membership in the World Health Organization. The constitution of the Organization, adopted July 22, 1946 by the International Health Conference, came into force Apr. 7, 1948, when the twenty-sixth member of the United Nations deposited its instrument of acceptance with the Secretary General of the United Nations. On June 15 the Organization

had 41 members, 9 of which were nonmembers of the United Nations. On July 10 the President of the First World Health Assembly, meeting at Geneva, announced that the Organization then had 54 members. Additional acceptances are coming in steadily.

Whenever the United States becomes eligible for representation on the Executive Board, the President, acting on the advice and consent of the Senate is to designate a representative, with one alternate, to attend the Executive Board sessions. The representative must be a graduate of a recognized medical school and have spent at least three years in active practice as a physician or surgeon. An annual appropriation, limited to $1,920,000, is authorized for the payment of the United States' share of the Organization's expenses. Additional sums are authorized, not to exceed $83,000 for the fiscal year beginning July 1, 1947, as may be necessary to pay the expenses incidental to participation by the United States.

(*The acceptances of membership by the United States in the World Health Organization of the United Nations is an important step in the promotion of World Health. It is anticipated that the World Health Organization will continue and extend the work started by the Health Division of the League of Nations in the control of disease and the promotion of health in many parts of the world.*—ED.)

The First World Health Assembly. *James A. Doull and Morton Kramer, Office of International Relations, U. S. Public Health Service.* Pub. Health Rep. 63:1379-1404, Oct. 22, 1948.

The First World Health Assembly convened in Geneva, Switzerland, on June 24, 1948, with delegates present from fifty-two of the fifty-four States then members of the Organization. In addition, observers were present from eleven nonmember States, from the Allied Control Authorities for Germany, Japan, and Korea and from ten other international governmental organizations. The United States was represented by Dr. Thomas Parran, former Surgeon General of the Public Health Service, chief delegate, Dr. Martha Eliot, Associate Chief of the Children's Bureau and Dr. James Ragland Miller, Trustee of the American Medical Association. The Honorable Ivor D. Fenton, Representative from Pennsylvania, was the congressional adviser. There were also 5 alternate delegates and 13 advisers.

At this first meeting, June 24, to July 24, 1948, the Assembly set up its organization, budget and program. Geneva was selected as the permanent headquarters. The functions of the Organization as outlined in the Consititution are broad and diverse. There are duties such as administration and revision of the sanitary conventions, making of recommendations for international control of habit-forming drugs, revision of the international lists of causes of death, unification of pharmacopeia and establishment of international standards for prophylactic and therapeutic agents which can be determined only by biologic

methods. First priorities in the public health problems to be attacked were given to malaria, tuberculosis, venereal disease, maternal and child health, nutrition and environmental sanitation.

The World Health Organization (WHO) assumed the responsibilities for the performance and completion of activities financed by unexpended UNRRA funds, of the epidemiologic notification services of the Office International d'Hygiene Publique and of the League of Nations Health Organization. Nongovernmental arrangements were made to establish and maintain effective collaboration not only with governments and governmental organizations but also with nongovernmental and other professional groups which contribute to the advancement of health, such as the World Medical Association, and World Federation for Mental Health, the International Unions Against Tuberculosis, Venereal Diseases and Cancer and the International Council of Nurses.

Health Services for the Rural Child. Availability of Hospitals, Physicians and Dentists in Service Areas. *John P. Hubbard, Maryland Y. Pennell and Rollo H. Britten, Washington, D. C.* J. A. M. A. 137:337-42, May 22, 1948.

Out of the two and one-half year nation-wide study which has been conducted by the American Academy of Pediatrics with the cooperation of the U. S. Public Health Service and the U. S. Children's Bureau, five groups of counties have been created recognizing two fundamental characteristics: (a) population; (b) proximity to densely populated areas. Metropolitan counties have been subdivided into greater metropolitan and lesser metropolitan. Counties geographically contiguous to any of the metropolitan counties are classified as adjacent. The remaining counties have been subdivided into isolated semirural and isolated rural.

The child population of the United States as of July 1, 1945 was estimated to be 36,000,000 children under 15 years of age; 13 million (36 per cent of the total) were in isolated counties. In 1946 there were approximately 463,000 beds in all general hospitals which admit children. In relation to child population, there was a ratio of 12.8 beds to every 1,000 children. The ratio in the service areas made up of metropolitan and adjacent counties was 15.4, in isolated counties 8.4. Thus children in isolated areas had only about half the relative number of hospital beds available locally for their care as the children in or near large urban centers.

Of all physicians in the United States in 1946, 116,795 were recorded as in private practice, or 3.2 physicians per 1,000 children. The physician-child ratio in isolated counties is one-half of that in metropolitan and adjacent counties. The distribution of dentists follows the same pattern as that of physicians with a concentration in or near large urban centers. As indicated by these analyses, the children in the

isolated counties, get distinctly less than their share of the service of hospitals, physicians and dentists located in their own areas. In order to equalize facilities and services for children living in these isolated areas, it has been estimated that the number of beds in the isolated counties would have to be increased by at least 50 per cent, the number of general practitioners doubled and the number of dentists tripled. 6 tables. 11 figures.—*Author's abstract.*

(*Note:—Attached to the reprints of the paper are listings of child population, the number of beds in general hospitals, the number of physicians and the number of dentists, county by county, for the entire United States*).

31. Surgery, Anesthesia

The Diagnosis and Treatment of Atresia of the Esophagus and Tracheo-Esophageal Fistula. *Ovar Swenson, Children's Hospital, Boston, Mass.* Pediatrics 1:195-204, February 1948.

The increasing number of successful operations to correct atresia of the esophagus and tracheo-esophageal fistula has brought renewed interest in this combination of anomalies. The anatomic variations of these malformations can be divided into five groups. There may be just atresia of the esophagus. The atresia may be associated with a tracheo-esophageal fistula to the upper or lower segment of esophagus or a double fistula may be present. A tracheo-esophageal fistula without an associated atresia is rare but does occur in about 1 per cent of the cases. The diagnosis is made on the history of regurgitation of any fluid taken by mouth, followed by a bout of cyanosis. The demonstration of an obstruction in the esophagus by failure of a soft rubber catheter to pass into the stomach is diagnostic. The infants are prepared for operation by proper hydration and administration of chemotherapy. In practically all cases it is possible to perform end to end anastomosis of the esophagus in these infants. Postoperatively, a gastrostomy is done and feedings are given through this until the tenth postoperative day when oral feedings are begun. In a series of 32 cases of primary anastomoses of the esophagus there were 5 postoperative deaths. 1 table. 7 figures.—*Author's abstract.*

Subfascial Abscesses of the Abdominal Wall in Children. *J. Robert Bowman, Johnson City, Tenn.* Pediatrics 1:627-34, May 1948.

Subfascial or deep abscesses of the abdominal wall in children often are perplexing diagnostic problems because the physical findings conform more with those of a new growth rather than with an inflammatory reaction. In 10 cases from the Surgical Service of the Boston Children's Hospital, the abscesses were located in any quadrant of the abdominal wall beneath the external oblique or anterior

rectus fascia. The abscess cavity ordinarily was small, containing 1 to 2 cc. of thick grumous material. Histologic studies indicated that the infections had spread in an irregular manner along the fascial planes, the muscle septa and the blood vessels, being limited finally by the development of thick, dense, irregular, fibrous walls. This explained the physical findings of irregular, stony hard, nontender, nonfluctuant lesions which seemingly involved all layers of the abdominal wall and moved with it. These physical signs along with the constant and characteristic increase of the polymorphonuclear leukocytes in the differential blood count are diagnostic. The etiologic agent in 8 of the 10 cases was Staphylococcus aureus. The treatment indicated is simple incision and drainage rather than extensive and often mutilating wide excision. 5 references. 2 figures.—*Author's abstract.*

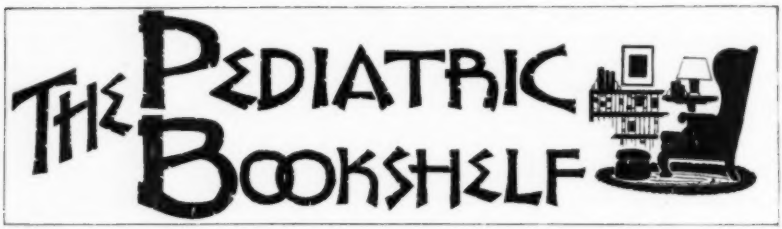
32. Tumors

Bilateral Embryonal Adenomyosarcoma of the Kidney (Wilms' Tumor). *M. F. Campbell, New York University College of Medicine, New York, N. Y.* J. Urol. 59:567-71, April 1948.

Bilateral Wilms' tumor is a rarity. Of 44 cases of renal embryoma at the Mayo Clinic and 100 cases at New York Memorial Hospital, none was bilateral. A few clinics have recorded single cases in a large series. Two instances are here described. An 18 month old infant with a mass in the left abdomen and a supposedly large right kidney was observed. The bizarre retrograde pyelogram suggested bilateral polycystic disease. Left nephrectomy revealed a grossly distorted organ thoroughly invaded by embryonic tissue with extension into the calices, pelvis and ureter. Exploration of the right kidney disclosed massive neoplastic involvement. No true metastases were discovered at the time. A 24 day old infant who died of inanition revealed dextrocardia, absent adrenals and bilateral embryonal adenomyosarcoma of the kidney. These patients presented true primary bilateral Wilms' tumor. Early metastasis was not evident in either. The congenital nature of the disease appears to be confirmed. 7 references. 2 figures.—*A. M. Bongiovanni.*

Hemangioendothelioma Treated with Radiophosphorus and Roentgen Rays. *J. M. Janes, and R. K. Ghormley, Mayo Foundation, Rochester, Minn.* Proc. Staff Meet., Mayo Clinic. 23:235-38, May 12, 1948.

Two cases of hemangioendothelioma of the bone with distant metastases were treated with deep roentgen rays and radiophosphorus (P^{32}). Remissions were obtained in both cases with subsidence of symptoms and marked decrease in roentgen signs. Both patients eventually died but it is thought that judicious use of these two agents will substantially prolong life. 2 figures.—*A. N. Evans.*



Advances in Pediatrics. Volume III. *Editorial Board: S. Z. Levine, Cornell University Medical College, N. Y., Allan M. Butler, Harvard Medical School, Boston, Mass., L. Emmett Holt, Jr., New York University College of Medicine, N. Y., and A. Ashley Weech, University of Cincinnati, College of Medicine, Cincinnati, O.* Interscience Publishers, Inc. N. Y. 363 pp. $7.50.

This is a collection of 8 "personalized" monographs, dealing with live problems of current pediatric interest. Each monograph covers its subjects excellently and is much more detailed in its coverage than is the average textbook, giving both factual data and critical analysis and interpretation. The subjects covered, and their authors are: (1) Effects of Birth Processes and Obstetric Procedures Upon the Newborn Infant by Clement A. Smith; (2) Retrolental Fibroplasia by T. L. Terry; (3) Emotions and Symptoms in Pediatric Practice by Milton J. E. Senn; (4) Therapeutic Agents in the Treatment of Epileptiform Seizures by William G. Lennox; (5) Viral Hepatitis by Joseph Stokes, Jr.; (6) Abnormalities and Variations of Sexual Development During Childhood and Adolescence by Lawson Wilkins; (7) Puberty and Adolescence: Psychologic Considerations by Hilde Bruch; (8) The Osteochondroses by Beckett Howorth.

Bovine Mastitis. A Symposium. *Edited by Ralph B. Little, Rockefeller Institute for Medical Research, Princeton, N. J. and Wayne N. Plastridge, University of Connecticut, Storrs, Conn.* McGraw-Hill Book Company, Inc., New York, 1946. 546 pp. $7.00.

The three infectious diseases of cows which are of great public health importance to the human consumer are brucellosis, bovine tuberculosis and chronic bacterial mastitis. Most physicians know enough about brucellosis and bovine tuberculosis to discuss them intelligently and at some length but bacterial mastitis is much less familiar, largely because most secondary infections in humans are not recognized for what they are.

This present book represents an endeavor "in as broad and critical a manner as possible to present the subject in such a way that the reader may obtain an over-all picture of the disease as it occurs naturally and of the advances that have been made in its study." Of particular interest to physicians are the chapters on Physiology of

Milk Secretion by Turner; on Bacteriology by Little, Brown and Plastridge; and on Public Health Significance by J. H. Brown. Streptococci are regarded as responsible for at least 85 per cent of the chronic mastitis conditions observed in dairy cattle. Almost always the organism responsible is Streptococcus agalactiae. Other streptococci in the order of importance are Str. uberis, Str. dysgalactiae and strongly hemolytic group C and group G streptococci (Lancefield). Staphylococci of various sorts account for another 10 per cent of the cases, and coliform organisms and diphtheroids for the remainder. Human strains of streptococci belonging to Lancefield's group A can give rise to either acute or chronic mastitis and usually follow a teat injury which is manipulated or treated by a milker who is a streptococcus carrier. "Whenever the milk from a dairy is incriminated in an outbreak of septic sore throat or scarlet fever, it is necessary for diagnosis to examine the milk from the entire herd. Special attention should be given to all acute cases of mastitis and teat injuries, for often those animals may be the offenders".

The chapter on Public Health Significance gives an interesting breakdown of epidemiologic data from the Sanitary Section of the U. S. Public Health Service regarding disease outbreaks conveyed through milk and milk products in the United States as reported by state and territorial health authorities for the years 1925 to 1943. During these nineteen years there were reported in the United States 793 such outbreaks of human disease and an additional 24 possibly conveyed through milk or milk products. The average, fairly constant, has been 42 outbreaks per year. Of the 793 outbreaks 704 were attributed to raw milk, 55 to pasteurized milk, 2 to canned milk and 32 to milk or milk products or others of unknown nature. More than half of the outbreaks were of typhoid fever, dysentery and diphtheria. The remaining outbreaks were chiefly streptococcic (septic sore throat and scarlet fever), food poisoning and gastroenteritis. There were 31 of brucellosis. Of the 126 outbreaks of food poisoning or gastroenteritis, excluding those attributed to chemical substances and paratyphoid organisms, 79 were attributed to raw milk or milk products, 27 to supposedly pasteurized milk or products, 1 to boiled milk, 2 to canned milk, and 17 to milk of unknown processing. Staphylococci caused nearly half of these. In 5, coliform bacteria were involved. In many instances, the toxin-producing bacteria were introduced into the product after pasteurization. Often, however, cows with staphylococcic mastitis were incriminated. Paratyphoid bacilli were responsible for 17 outbreaks. It must be emphasized that only a small minority of such milk-borne infections are reported to the proper public health authorities and that the actual rate of incidence is much higher than these figures indicate.

Textbook of Endocrinology. *Hans Selye, University of Montreal, Montreal, Que., Canada. With a Preface by Professor Bernardo A. Houssay, Buenos Aires, Argentina.* Acta Endocrinologica, Université de Montréal, Montreal, Canada. 1947. 914 pp.

The field of endocrinology not only permeates the whole of clinical and experimental medicine but is expanding rapidly in all aspects. To correlate all that is significant and present it in usable form as a textbook is a task which few men could undertake but Dr. Selye has achieved this to a remarkable degree. The subject is presented largely from the viewpoint of the experimental endocrinologist. Following a brief introductory and historical section, a chemical discussion of the steroid hormones is given. Then each endocrine organ and its active hormones is treated separately, in terms of morphology, histology, chemistry, physiology and clinical implications. The adrenals, hypophysis, ovaries, pancreas, parathyroids, testes and thyroid are discussed extensively in separate sections. Described more briefly are the less familiar hormones of the kidney, gastrointestinal tract, liver and autonomic nervous system. The thymus and pineal are each given a short chapter. In a final section entitled "Correlations" the author recapitulates briefly his views concerning the general adaptation syndrome, the sexual cycle, puberty, pregnancy, lactation, hibernation and antihormones. At the end of each chapter key references are cited, with brief notations of their content.

Much of the clinical value of the book lies in the numerous excellent photographs of patients, organs and tissues and the detailed notations which accompany them. The author's terminology is logical but unfamiliar in some sections, but one is soon able to follow him easily. The chapter on the adrenals is broken up into short sections dealing alternately with the cortex and medulla. It is emphasized in the text that the close anatomic relationship between two such apparently independent tissues is probably significant. The recently demonstrated relationship between epinephrine and pituitary adrenocorticotropic activity lends support to the author's method of discussion. Nevertheless the clinician in search of help would profit by having the two tissues discussed separately.

Some of the clinical sections could be improved. Lack of first hand familiarity with several syndromes, among them dwarfism, is evident. This illustrates the difficulty of a single author seeking to cover so wide a field. The necessary information on Cushing's syndrome is all in the book but is scattered. A recapitulation in some form would be very useful to the clinician. Expanded reference lists would strengthen the book and add greatly to its value. Dr. Selye's book is not for the dilettante. It is a book for reading, not for dipping into casually, and the reading is very worth while. Until an authoritative text devoted to pediatric endocrinology is written the pediatrician will find more of what he wants to know in this book than in any other known to the reviewer.

Pediatric Anesthesia. *M. Digby Leigh, Director of Anesthesia, and M. Kathleen Belton, Supervisor of Pediatric Anesthesia, Vancouver General Hospital, Vancouver, B. C., Canada.* New York, The Macmillan Co., 1948. 240 pp. 84 illus. $5.50.

This is the first work on an important sub-specialty long neglected by most otherwise capable anesthesiologists, surgeons and pediatricians. As the authors frequently point out, violations of the fundamentals of good anesthesia produce a far graver situation in infants and young children than in older children and adults. Both authors have devoted many years to pediatric anesthesia, and both are recognized authorities in this specialty. A large portion of the book is devoted to the adaptation for infants and children of certain well-accepted adult anesthetic agents and technics, such as cyclopropane anesthesia, spinal and regional block methods and the closed carbon-dioxide absorption technics. The proper modification of equipment and technics requires cognizance of certain special principles. Among these principles are: (1) maximal reduction of "dead space" in the avoidance of carbon dioxide accumulation; (2) the replacement of even the smallest amounts of blood loss; (3) attention to adequate elimination of body heat during anesthetization and surgical manipulation. The text covers preoperative preparation, respiration and circulation, stages and planes of anesthesia, intubation (endotracheal), intravenous anesthesia, rectal anesthesia, anesthesia with local agents, choice of anesthetic agent and technic, complications during anesthesia, postoperative care, prophylaxis and therapy with oxygen and fluid therapy. The chapters devoted to the latter two subjects are almost too brief.

Medical Writing, The Technic and Art. *Morris Fishbein, M. D., Editor, The Journal of the American Medical Association. With the assistance of Jewel F. Whelan, Assistant to the Editor.* 2nd. Ed. Blakiston, Philadelphia, Pa., 1948. $4.00

The information and counsel in this book have been compiled from years of experience in handling the almost countless manuscripts submitted to the Journal of the American Medical Association and the various special periodicals published by the Association. The contents will be of service to physicians and writers in all scientific fields preparing articles ranging from the briefest report to a full treatise. It offers help in formulating style, abbreviations, spelling and capitalization, proofreading, indexing, illustrations, tables and charts and abbreviations of names of periodicals, and gives expert guidance in the display of individuality and literary talent.

Office Manual for the Medical Secretary. *Evangeline Markwick, Poultney, Vt., Agnes Erickson, New London, N. H. and M. Herbert Freeman, Paterson, N. J.* Gregg Publishing Company, New York, N.Y., 1947. $3.00.

The Office Manual should be a vital part of the medical secretary's bookshelf for in it are the answers to the many questions and problems which come up every day in the doctor's office. It was compiled to meet the specifications given by 539 physicians who answered a questionnaire on the duties and training desirable for medical secretaries. The many chapters include such aspects as being a hostess, professional worker, correspondent, laboratory assistant, helper in legal matters and so on. There is a section on editorial work, accounting and collecting. The book is not meant to take the place of the training the secretary should have before entering the position but rather as an aid in fulfilling her tasks properly and efficiently.

Pharmacology and Therapeutics. *Arthur R. Cushny, M. D., LL.D., Thirteenth Edition. Thoroughly Revised, Arthur Grollman, Ph.D., M.D. and Donald Slaughter, M. D.* Lea and Febiger, Philadelphia, Pa. $8.50.

Since 1899, when its first edition appeared, "Cushny" has been a standard textbook in pharmacology. This latest thirteenth edition, as revised by two eminent American pharmacologists, "brings the subject matter up-to-date with as little violence as possible to the original spirit of the text".

Otitis Media En El Lactante. Estudio Fisiopathológico Y Clinico. *Manuel Fairén, Ayudante En La Clínica Universitaria De Otorrinolaringología De Zaragoza,* Publicaciones De Rivista Española De Pediatría, III, Zaragoza, 1947.

An excellent survey of infantile ear infection in all its aspects, including pathology, bacteriology, diagnosis and surgical and medical treatment.

New Books and Pamphlets

Dental Caries and Fluorine. Washington, D. C. A. A. A. S. Publications. $3.50.

Glomerular Nephritis. Diagnosis and Treatment. T. Addis. New York, Macmillan, 1948. 33 pp.

L'Anémie Aigue Fébrile avec Ictère et Hémoglobinurie chez L' Enfant (Ses Rapports avec la Maladie Hémolytique Congénitale). M. P. A. Balandra. Thesis, Paris, 1945, Rouen, Impr. commerciale, 1945.

Dystrophia Myotonica and Allied Diseases. Julia Bell, with clinical notes by J. Purdon Martin. Cambridge, England, Cambridge University Press. 410 pp.

Étude sur la Prophylaxie de Rachitisme. Odette Bory. Thesis. Paris, Foulon, 1945, 61 pp.

Éleménts de Puériculture de Pathologie et D'Obstétrique à L'Usage des Infirmières et Elèves Sages-Femmes. J. Bray, Paris, Vigot, 1947. 263 pp.

The Cerebral Palsied Child and His Care in the Home. Viola E. Cardwell. New York City, Association for the Aid of Crippled Children. 196 pp. $1.00.

Psychology of Childhood and Adolescence. Luella Cole and John J. B. Morgan. New York, Rinehart and Co. 416 pp. $3.50.

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The Acoustic Method for the Training of the Deaf and Hard-of-Hearing Child. Max A. Goldstein. St. Louis, Laryngoscope Press, 244 pp. $3.00.

Cardiopatias Congenitas de la Infancia. Augustin Castellanos y Gonzalez and L. A. Cabrera. Habana, Cuba, Manuel V. Fresnada. 406 pp. atlas. $9.

Help Them Help Themselves. J. M. Gratke. Dallas Texas Society for Crippled Children. 1947. 184 pp.

The Contemporary American Family. Ernest R. Groves and Gladys H. Groves. Philadelphia, J. B. Lippincott Co. 838 pp. $2.60.

Psychiatric Examination of the School Child. M. B. Hall. Baltimore, Williams and Wilkins, 1947. 368 pp.

Recherches Médicales en France Pendant la Guerre (1939-1945). J. Hamburger. Editions Médicales Flammario, 1947. 322 pp.

Handbook of Child Guidance. Edited by Ernest Harms. New York City, Child Care Publications. 751 pp. $8.60.

Education and Health of the Partially Seeing Child. W. Hathaway. New York, Columbia University Press. 216 pp. $2.50.

Feeding Under Five. Nell Heaton. London, Faber and Faber. 106 pp.

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Up From the Ape. Earnest A. Hooton, Professor of Anthropology Harvard University, Cambridge, Mass. New York, The Macmillan Company, 1947. 788 pp. $5.00.

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Les Réactions Douloureuses Abdominales dans l'ictère Catarrhal des Enfants. Anne Marie (Bernard) Loygue. Thesis. Paris, Foulon, 1945. 45 pp.

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Family Skeletons. D. D. Whitney Lincoln, University of Nebraska Press, 1946. 284 pp.

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Pediatrics for Nurses. Arthur G. Watkins. Baltimore, Williams and Wilkins Co. 1948. 192 pp. $3.50.

Announcements

A Clearinghouse For Research in Child Life. *Clara E. Councell, Director, Clearinghouse, Children's Bureau, Washington, D. C.* The Child 13:61-62, October 1948.

The first meeting of the Advisory Committee of the Children's Bureau Clearinghouse for Research in Child Life was held in Washing-

ton on Sept. 11, 1948, to launch the organization of this service. The clearinghouse is being established at the request of scientists who feel the need for a center that will promote collaboration and interchange of information on current research in the various fields affecting child life. Moreover, the Children's Bureau, as the Federal agency authorized to "investigate and report . . . upon all matters pertaining to the welfare of children and child life" needs an over-all view of current research in order to study the question of how existing activities may be supplemented and extended. This clearinghouse is a mechanism to collect from and distribute to research workers information about current investigations that directly affect children and mothers. Its main purpose is to help keep scientists informed about such studies in progress that have not been fully described in publications and to bridge the time-gap between completion and published report of these research projects. Research workers will be asked to prepare their own brief descriptive statements about projects and will, of course, not be expected to give results or conclusions except as may be desired by the worker himself. The participation of research workers will be voluntary but it is hoped that cooperation will be extensive. The clearinghouse will canvass investigators in various fields for reports on studies in progress and will release its first bulletin in 1949 to inform scientists and a restricted group of authorized agencies and organizations about current investigations relating to child life. The clearinghouse will also provide information to research workers upon request. The members of the advisory committee are Dr. John E. Anderson, University of Minnesota; Mr. David G. French, American Association of Social Workers; Dr. Willard C. Olson, University of Michigan; Dr. John W. M. Whiting, University of Iowa; and Dr. Irving J. Wolman, University of Pennsylvania Medical School.

(*This will be an important aid in the furtherance of research in child development in this country, by narrowing the intervals which now exist between the dates when a project is first launched or completed or the results tabulated and analyzed and the date when the formal printed report becomes generally available in some scientific journal. Furthermore, workers can be kept informed of each other's activities on related problems long in advance of the preparation of reports.*—ED.)

A NEW NATIONAL INSTITUTE FOR RESEARCH ON TEETH AND DENTITION

Establishment of a National Institute of Dental Research under authority of an Act of Congress has been announced. Dr. H. Trendley Dean will be Director. The National Institute of Dental Research will be in the National Institutes of Health at Bethesda, Md. headed by Assistant Surgeon General R. E. Dyer. It will have equal status with the already established National Cancer and Heart Institutes and the Institute of Experimental Biology and Medicine. This new Institute will conduct a broad attack on dental diseases and related diseases of

the mouth. The program, for which Congress authorized appropriations of $750,000 a year, will include research in the Institute's own laboratories at Bethesda; financial grants to outside institutions for research and training of professional personnel, and fellowships and traineeships in the Institute to promote training and research in dental diseases, their diagnosis, prevention and treatment. Among other problems the Institute will take over the work now being done in the Dental Research Section headed by Dr. Dean in the National Institute of Experimental Biology and Medicine. The section has been responsible for most of the basic research on the effect of fluoride on dental caries. Experiments are now in progress in cooperation with the Michigan State Health Department and the University of Michigan, on the mass prevention of dental caries through the fluorination of public water supplies.

ERRATUM

Vol. 3, No. 3, August 1948

Page 403—Third line: "in 380 . . ." should read "*in 38* . . ."

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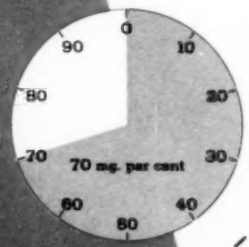

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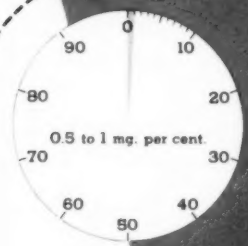

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1. Neiman, I.S.: The Use of a Gum Containing Sulfathiazole to Prevent Infectious Pharyngitis, Arch. Otolaryngol. (in press.)

2. Fox, N., Kesel, R. G.: Hyperplastic Sinopharyngostomatitis, Arch. Otolaryngol., *42*:368 (1945.)

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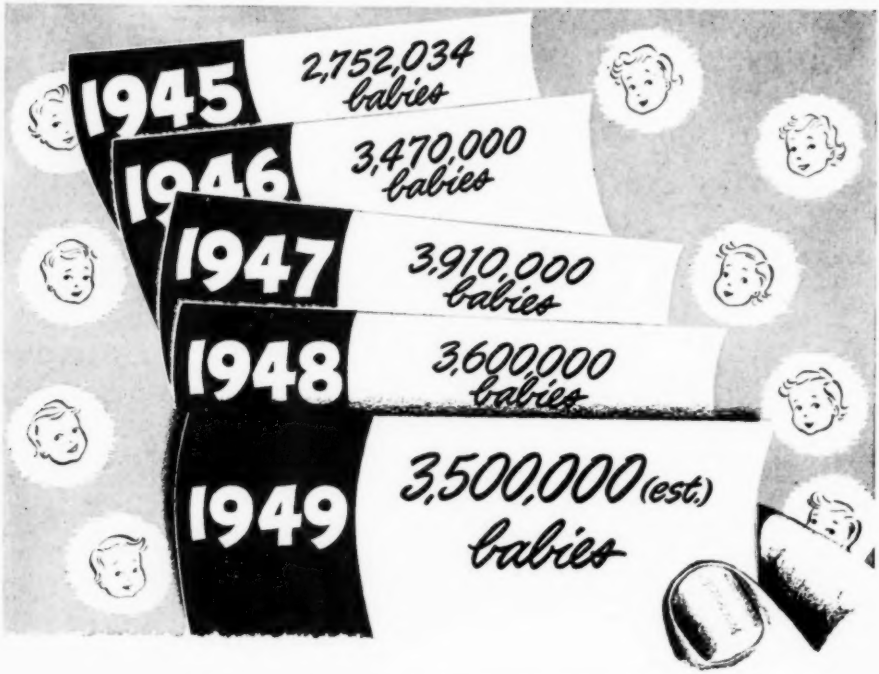

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